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BALLANTINE BOOKS
SF

EDITED BY
Judy-Lynn del Rey

Stellar #2

SCIENCE-FICTION STORIES

First Publication Of
All New—All Wonderful—Stories By
ASIMOV * CLEMENT * CONNER * HALDEMAN
NIVEN * SIMAK * UTLEY * WALDROP * WHITE

COMMAND PERFORMANCE

When readers discovered Stellar #1, they began writing enthusiastic letters to the editor, demanding more great new stories that were *fun* to read. "This is what we've been looking for," they insisted. "This is what made us start reading science fiction in the first place. Now give us more!"

So the command again went out to the top writers in the field, asking for more stories that would have beginnings, middles—and ends; stories that would recapture the long-missing sense of wonder; stories that would entertain and delight.

There was a postscript on each such editorial letter, too. "Don't make the stories as good as those in Stellar #1," it commanded. "Make them better!"

Well, somewhat surprisingly, a lot of the writers did just that. And here are the stories—just turn the page . . .

A READER'S GUIDE

SIC TRANSIT . . . ?

A Shaggy Hairless-Dog Story

Evolution works in strange ways . . . to ensure the survival of the specious!

☆ ☆ ☆

CUSTOM FITTING

Clothes do make the man . . . or whatever!

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BICENTENNIAL MAN

Andrew Martin was a robot who had everything—except the one thing he wanted most!

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MISTAKE

Kthistlump made only one mistake . . . but it was fatal!

TO WHAT'S INSIDE . . .

UNSILENT SPRING

Old Doc Benton had an epidemic on his hands . . . and the solution would take a little digging!

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STUCK WITH IT

Cunningham was in a sticky situation . . . that was threatening to come unstuck!

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TINDAR-B

Sutton's expedition was about to go up in smoke . . . but nobody knew it!

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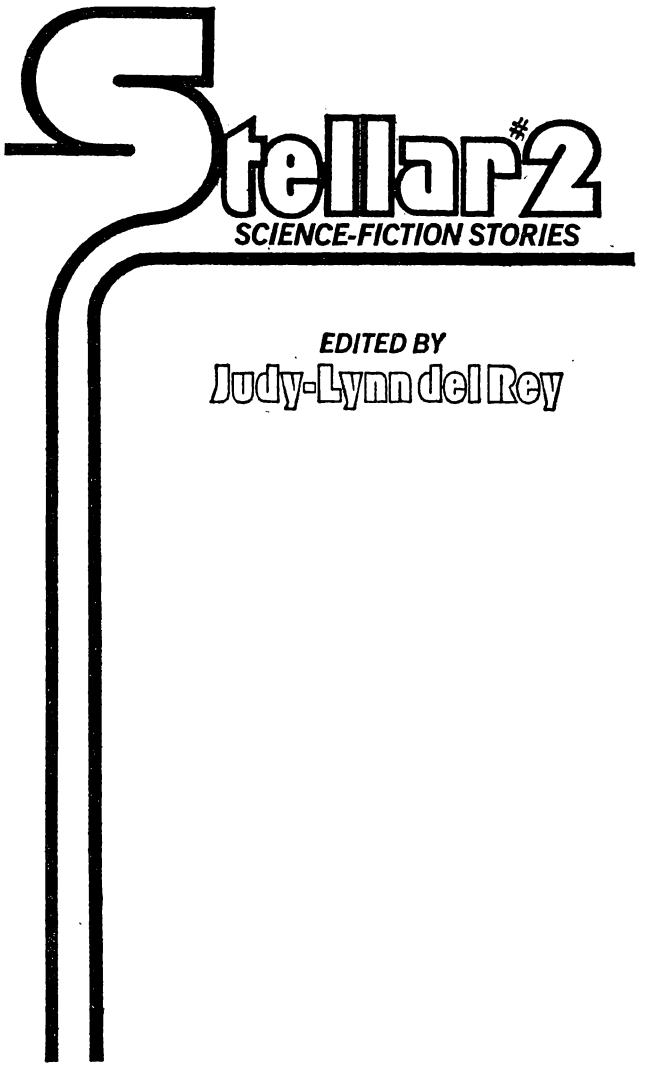
SONGS OF DYING SWANS

It seemed like such a harmless theft . . . no one could have guessed the galactic implications!



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For
Urban, Innocent, and Boniface del Rey
and for
Lester, Who Made Them Probable

Contents

Custom Fitting

James White

For many years Hewlitt had been in the habit of spending half an hour sunning himself at the entrance to his shop when the sunlight was available in sufficient strength. The period was determined by the length of time it took for the sun to clear the eaves of the buildings on his side of the street and to move far enough out to necessitate his pulling out the shop's awning so that the cloth on display would not fade. He spent the time watching the passersby—hoping that some of them wouldn't—and anything else of interest. Usually there was nothing interesting to see, but today was an exception.

A large, plain furniture van, preceded by a police car and followed closely by an Electricity Department truck, turned into his street from the main road. The presence of the police vehicle was explained by the fact that the convoy was moving in the wrong direction along a one-way street. When the procession finally halted, the removals van was directly facing him.

For perhaps a minute there was nothing to see except the reflection of himself and his doorway in the dark, glossy flanks of the van. It was the slightly distorted picture of a thin and rather ridiculous figure wearing a black jacket and waistcoat with striped trousers, a small flower in the lapel, and a tape measure—the outward

sign of his profession—hanging loosely from his neck. The lettering on the door behind the figure was executed in gold leaf in a bold italic script and said, in reverse:

GEORGE L. HEWLITT,
TAILOR

Suddenly—as if some hypothetical film director had shouted "Action!"—everything happened at once.

Two senior police officers carrying traffic-diversion signs left their vehicle and moved in opposite directions to seal off each end of the street. The Electricity Department truck disgorged a gang of neatly overalled workmen, who quickly began unloading collapsible screening, a nightwatchman's hut, and a man wearing a well-tailored suit of dark gray worsted and a tie which was strictly establishment. He also wore a very worried expression as he glanced up and down the street and at the windows overlooking it.

"Good morning, Mr. Hewlitt," the man said, coming forward. "My name is Fox. I'm with the Foreign Office. I, ah, would like to consult you professionally. May I come inside?"

Hewlitt inclined his head politely and followed him into the shop.

For a few minutes nothing else was said because Fox was pacing nervously about the interior, staring at the shelves of neatly rolled cloth lengths, fingering the pattern books which were placed strategically on the polished wooden counters, and examining the paneling and crystal-clear mirrors in the big fitting room. While the Foreign Office official was looking over the premises, Hewlitt was studying Fox with equal attention.

Fox was of medium height, slimly built, with a head-forward tendency and prominent shoulder blades. From the small but noticeable lateral crease behind the jacket collar, it was obvious that he tried to correct the HF and PSB tendency by carrying himself unnaturally erect. Plainly Fox's tailor had had problems, and Hewlitt wondered if he was about to inherit them.

"How may I help you, sir?" Hewlitt said when his visitor had finally come to rest. He used a tone which was friendly but one with that touch of condescension which very plainly said that it would be Hewlitt's decision whether or not he would build a jacket around Fox's prominent shoulder blades.

"I am not the client, Mr. Hewlitt," Fox said impatiently. *"He* is waiting outside. However, this matter must be treated in the strictest confidence—kept absolutely secret, in fact, for the next two weeks. After that you may discuss it with whom you please.

"From our thorough if necessarily hasty inquiries," the Foreign Office official went on, "we know that you live above these premises with your wife, who is also your seamstress and a partial cripple. We also know that your work is competent, if a little old-fashioned as regards styling, and that your stock is remarkably lacking in materials using man-made fibers. For many years your financial position has not been good, and I should say at this juncture that your silence as well as your workmanship will be very highly paid.

"The garment itself should present no difficulty," Fox ended, "since all that is required is a fairly well-fitting horse blanket."

Coldly, Hewlitt said, "I am completely lacking in experience where horse blankets are concerned, Mr. Fox."

"You are being proud and unnecessarily stubborn, Mr. Hewlitt. This is a very important client, and may I remind you that across the street there is a branch of a well-known multiple tailoring company which is also capable of doing the job."

"I agree," said Hewlitt dryly. "That company could do a pretty good job—on a horse blanket."

Fox smiled faintly, but before he could reply one of the workmen entered and said, "The screens are in position, sir, and the van is blocking the view from the other side of the street. Now we need the pole to pull out the sun awning. That will hide the shop front from upper-story windows on the other side of the street."

Hewlitt pointed toward the recess behind the display window where the awning pole was kept.

"Thank you, sir," said the workman in the tones of a senior public servant who is addressing a lowly member of the public he serves, then he turned away.

"Wait," said Fox, visibly coming to a decision. "When you've done that, ask His Excellency if he would be good enough to come in, please."

The strict secrecy being observed, the Foreign Office involvement, and the type of garment required had led Hewlitt to expect some highly controversial political figure: an overweight person from an underfed nation who was intent on expressing his individuality and independence by wearing an English-tailored native garment. Such a person might well be frightened of an assassin's bullet and feel it necessary to take these elaborate precautions; but that, after all, was not any of Hewlitt's business. But when he *saw* the client . . .

I'm dreaming, he told himself firmly.

The creature resembled a centaur, complete with hooves and a long, streaming tail. At first glance the torso from the waist up resembled that of a human being; but the musculature of the arms, shoulders, and chest was subtly different, and the hands were five-digited, each comprised of three fingers and two opposable thumbs. The head, carried erect above a very thick neck, was made to seem disproportionately small. The face was dominated by two large, soft, brown eyes that somehow made the slits, protuberances, and fleshy petals which comprised the other features visually acceptable.

Apart from a large medallion suspended around its neck, the being wore no clothing. Its skin was a mottled pinkish-brown color, and the creature twitched continually as if to dislodge invisible flies. It was obviously male.

"Your Excellency," said Fox smoothly, "may I present Mr. George Hewlitt. He is a tailor, or maker of clothing, who will produce for you garments suitable for your stay on Earth."

Instinctively Hewlitt put out his hand. He discovered that his client's grip was firm, the digits warm and bony, and the way the lower thumb curled upward into his palm was indescribable but not unpleasant. For some odd reason he could no longer think of the being as an "it."

"The initial requirement," Fox said briskly, "is for a garment which will be comfortable and will keep His Excellency warm during the presentation ceremonies and socializing that will follow. The garment should be black, edged with gold or silver braid, perhaps, and should carry pseudo-heraldic decorations. No existing family crests can be used, obviously. He will also require a second garment, less formal, for use during sightseeing tours out-of-doors."

"A braided and decorated horse blanket, then," said Hewlitt, "and a plain one for walking out. But if you could tell me the kind of function His Excellency is to attend, I would be in a better position to produce something suitable."

Fox shook his head. "Security."

"I can, if necessary, work blindfolded and with one arm tied behind my back," Hewlitt said, "but I do not produce my best work under those conditions. However, if His Excellency would kindly follow me into the fitting room?"

With a soft, irregular thumping of hooves the client, accompanied by Fox, followed into the fitting room and stood looking at himself in the angled mirrors. Rarely had Hewlitt seen a customer more ill at ease. The other's hide was twitching and tightening along his back and flanks before Hewlitt had even laid the tape on him.

Without being obtrusive about it, Hewlitt studied the twitching hide, looking for insects or other evidence of parasitic presences. Relieved at not finding any, he thought for a moment, then switched on the wall heaters, which were never used during the summer months. Within a few minutes the room was uncomfortably warm and the twitching had stopped.

While Hewlitt went to work with his tape measure

and pad, he asked, "I assume that my client's home planet is warmer than Earth?"

"Yes," said Fox. "Our weather at present would approximate to one of their sunny days in late autumn."

From small of back to root of tail, 63 inches, Hewlitt wrote carefully. He said, "In cool weather they wear clothing, then?"

"Yes, a form of toga wrapped around their bodies in a loose spiral, with— Oh, now I see why you switched on the heaters. I should have thought of that; it was very remiss of me. But His Excellency does not want to wear his native clothing for very good reasons, so he thought it better to suffer a little discomfort rather than to take the risk of your being influenced, even unconsciously, by his native dress. It is most important that he wear clothing which is made and styled on Earth."

From center line back to foreleg knee joint, 42 inches, Hewlitt wrote. To Fox he said, "The requirement is for a blanket-like garment, but surely my client will require additional clothing if he is to feel—"

"Just the blanket, Mr. Hewlitt."

"If the positions were reversed," said Hewlitt patiently, "you would no doubt feel reasonably warm in a blanket; but you would feel much more *comfortable* if you were wearing shorts as well."

Irritably, Fox said, "Please follow instructions, Hewlitt. Your fee will be generous, regardless of how many or how few garments you make for His Excellency. Your attempts to drum up extra business is a waste of your time and ours."

"The majority of civilized people on Earth wear undergarments," said Hewlitt, "and unless climatic conditions, religious beliefs, or the dictates of local fashion rule otherwise, I should think that the same applies on other worlds."

"You are being argumentative, uncooperative, and you are introducing unnecessary complications into what is a very simple set of instructions," said Fox angrily. "Let me remind you that we can still go across the street!"

"Please do so," said Hewlitt.

Fox and Hewlitt glared at each other for several seconds while the alien, his features unreadable by virtue of their complete alienness, turned his outsize brown eyes on each of them in turn.

Suddenly a soft, gobbling noise issued from one of the fleshy slits in his face and, simultaneously and much louder, a pleasant baritone voice spoke from the ornament suspended from the alien's neck. It said, "Perhaps I can resolve this difficulty, gentlemen. It seems to me that Mr. Hewlitt has displayed qualities of observation, good sense, and concern for the comfort of his customer, myself. Therefore, I would prefer him to continue to act as my tailor providing he is willing to do so."

Fox swallowed, then said weakly, "Security, Your Excellency. We agreed that you would not speak to any member of the public until . . . the day."

"My apologies, Mr. Fox," the alien replied through his translation device, "but on my world a specialist like Mr. Hewlitt is considered something more than a member of the public."

Turning to Hewlitt, he went on, "I would be most grateful if you could give the matter of my underwear your attention. However, for reasons which Mr. Fox would prefer to remain secret for the present, this garment must also be of Earth material and styling. Is this possible?"

Hewlitt bowed slightly and said, "Of course, sir."

"Not *sir!*" said Fox, obviously angered because his instructions had been ignored by the alien. "This is His Excellency the Lord Scrennagle of Dutha—"

Scrennagle held up one double-thumbed hand as he said politely, "Pardon the interruption. That is only an approximation of my rank and title. 'Sir' is sufficiently respectful and conversationally much less cumbersome."

"Yes, Your Excellency," said Fox.

Hewlitt produced a swatch of patterns and a style book from which Scrennagle chose a soft lambswool in pale cream which would not, the tailor assured them, react in any fashion with his skin. The style plates fasci-

nated him, and when Hewlitt began to sketch similar designs modified to fit his centaur-like body, the alien was practically breathing down the tailor's neck.

Polite questioning had elicited the facts that Scrennagle insisted on dressing himself and that the area of skin covering the spine between waist and tail was the part of his body most susceptible to cold.

"If you wouldn't mind, sir," said Hewlitt at that point, "I would like you to advise me regarding the positioning of fastenings, openings for the elimination of body wastes, and so on . . ."

Scrennagle could twist the upper part of his body so that his hands could reach either flank as far back as the tail, although he could only see the lower end of his back. The undergarment which Hewlitt had to devise would have to be stepped into and pulled up on to the fore and hind legs in turn. It would be double-backed and buttoned through, with one wide flap of cloth going over the back to the opposite flank and fastening there, while the other flap passed over the back in the opposite direction to button on the other flank—rather like a double-breasted suit worn back-to-front. Scrennagle said that the double thickness of cloth at the back would be very comfortable, the local temperature being what it was; and he found no fault in the more complicated flap and fastening arrangements for the fly and rear.

He was politely insistent, however, that his tail should not be even partially concealed. There were strong psychological reasons for this, apparently.

"I quite understand, sir," said Hewlitt. "And now if you will stand quite still I shall measure you. The dimensions and contour descriptions required will be much more complex than those needed for the blankets. Once I have drafted a properly fitting pattern for the garment, however, making additional ones will present no problems. Initially a set of four undergarments should be sufficient to—"

"Hewlitt—!" Fox began.

"No gentleman," Hewlitt said very quietly, "no mat-

ter how high or low his station, would undertake a major journey with just one set of underwear."

There was, of course, no reply to that; and Hewlitt resumed measuring his client. While he worked he told Screnagle exactly what he was doing and why. He even went so far as to discuss the weather in his attempts to make his client relax bodily so that he would not shape the garment to a figure that was being held in an unnatural pose through tension.

"I intend making the leg sections reach less than halfway between the hip joints and knees, sir," he said at one point. "This will give the maximum comfort and warmth commensurate with the length of the over-garment. However, it would assist me greatly if I knew something more about the purpose of this blanket—what movements you would be making in it, whether or not you are expecting to be photographed, the geographical or architectural surroundings—so that the garment will not look out of place."

"You're fishing for information," said Fox sharply. "Please desist."

Hewlitt ignored him and said to Screnagle, "You can rely on my discretion, sir."

"I know that," said Screnagle. Turning so that he could see Fox in the fitting-room mirror, he went on: "A certain amount of curiosity is natural in these circumstances, and if Mr. Hewlitt has been entrusted with the secret of my presence in this city, surely the reason for my being here is a minor additional confidence which should not overstrain his capacity for—"

"With respect, Your Excellency," said Fox, "these matters must not be made public until all the necessary preparations have been made."

Hewlitt wrote *Girth at forelegs, 46 inches.* Controlling his exasperation, he said, "If the material, finish, and decoration of these garments are to fit the occasion—an important occasion no doubt—I really should be told something about it."

There was silence for a moment, then Screnagle and his translation device made noises which were possibly

the equivalent of clearing an alien throat. His head went up and he stood very still as he said, "As the accredited representative of Dutha and of the Galactic Federation on Earth, I shall be presenting my credentials at the Court of St. James with the usual attendant ceremonies. In the evening of the same day there will be a reception at which the Sovereign will also be present. Although I am officially only an ambassador, the honors will be similar to those accorded a visiting head of state. The reception will be covered by the media, and interviews will be given following the official . . ."

Hewlitt was no longer listening to him. His sense of outrage was so great that no word could filter through to his mind with any meaning in it. Quietly he excused himself to Screnngle; then to Fox he said, "Could I have a private word with you, outside?"

Without waiting for a reply he stalked out of the fitting room and across to the door, which he held open so that Fox could precede him into the hallway. Then he closed the door firmly, so firmly that the glass shattered and tinkled onto the porch tiling.

"And for this," he whispered fiercely, "you want me to make a—a *horse blanket?"*

Just as fiercely, Fox replied, "Believe it or not, I sympathize with your feelings. But this could be the most important event in human history and *it must go well!* Not just for Screnngle's sake. What we do here will be the yardstick, the example, for embassies all over the world; and they must have no room for criticism. Some of them will feel that they should have had the first visit, and would welcome the chance to criticize. They must not be given that chance."

One of the Special Branch men in the too-clean overalls came onto the porch, attracted by the sound of breaking glass. Fox waved him away, then went on, "Of course he should wear more than a horse blanket. I know that as well as you do. But I didn't want you to know how important this is. Apart from the danger of a leak, a very small risk in your case, I didn't want you to

worry about the job so much that you would go to pieces.

"At the same time," he went on harshly, "we cannot afford to have him appear ridiculous, to look like a cross between a dressed-up horse and a tail-coated chimpanzee from a circus. He is far too important an individual, and this is much too important an occasion for our planet and our race, for us to risk anything going wrong."

More quietly he went on, "Scrennagle wants to make a good first impression, naturally; but we as a species must also make a good impression on him. So it is probably safer in many respects to let him wear a blanket, even though it lacks both imagination and dignity. But, Hewlitt, if you *want* to tailor something more elaborate for the first ambassador from the stars, it must be exactly right for the occasion. Do you want to take on such a heavy responsibility?"

Hewlitt's vocal equipment seemed to be completely paralyzed by a combination of extreme anxiety and sheer joy at what was the ultimate challenge not only to an individual, but to a member of one of the oldest crafts known to mankind. He nodded.

Fox's relief was obvious. He said, very seriously, "You are assuming a large part of the responsibility which is properly mine. I'm grateful, and if you have any suggestions which might help. . ."

"Even if they are none of my business?" Hewlitt asked; then he added, "My *tailoring* business, that is."

"Go on," Fox said warily.

"We were discussing dressed-up horses just now," Hewlitt went on. "My client resembles a horse much more than he does a human being. He is too much of a diplomat to complain; but put yourself in his place for a moment and think of the effect on you of the pomp and pageantry, the transport arrangements and—"

"Scrennagle has already studied and adapted himself to the more personal aspects of our civilization," said Fox. "At meals he lies with legs folded underneath his body, allowing his erect torso to rise to a comfortable

height for eating and conversation. Since he has no lap, the napkin remains folded by his plate. Where toilet facilities are concerned—"

"I was thinking," said Hewlitt, "of how he might feel about horses pulling him or their being ridden by human beings. I would suggest that a state limousine rather than a coach be used, and that the escort and guards be chosen from regiments other than the Household Cavalry or Horse Guards. There are several physiological similarities between Scrennagle and terrestrial horses. Not as many as those between an ape and a human being; but it might be better not to have too many animals around which closely resemble the visiting ambassador, wouldn't you say?"

"I *would* say," Fox said, and swore quietly. "Somebody should have thought of that."

"Somebody just did," Hewlitt said, opening the door and motioning Fox to precede him over the broken glass and back to the fitting room, where the most important client an Earth tailor had ever had was waiting and gently stamping all four of his feet.

"My apologies for the delay, sir," said Hewlitt politely, "but I now have a clearer idea of what is expected of me and of *you,* sir. Before I resume measuring, do you have any allergies toward certain materials, or any particularly sensitive areas, which might cause you discomfort?"

Scrennagle looked at Fox, who said, "We have investigated this matter in great detail; and there is a long list of items which could cause trouble—some of them serious trouble—if they were allowed to remain in contact with His Excellency's skin for long periods.

"The situation is this," he continued. "Extraterrestrial pathogens cannot live in human bodies, and vice versa. This means that we cannot possibly contract a disease from Scrennagle and he is likewise impervious to our germs. However, purely chemical reactions are a different matter. One of the things likely to cause His Excellency to break out in a rash or worse is the synthetic fi-

bers used in clothing, virtually all kinds of synthetics. You see the problem?"

Hewlitt nodded. The ambassador's underwear, shirts, ties, and socks would have to be made from pure wool, cotton, or real silk; the suiting materials would have to be woolen worsted and, for the casuals, Harris or Irish Thornproof tweed. Bone buttons would be required and zip fasteners made from metal rather than nylon. Trimmings, the canvas stiffening, the wadding for shaping and softening the outlines would also have to be nonsynthetic; and the thread used to hold everything together would have to be the old-style sewing cotton rather than nylon thread. He could see the problem, all right, and like most big problems this one was composed of a lot of little ones.

"One of the reasons why you were chosen for this job," said Fox, "was that you were old-fashioned enough in your ideas to keep such things in stock. But frankly, I was worried in case you would be too old-fashioned to react properly toward an . . . unusual . . . client. As it happened, you showed no sign of xenophobia whatsoever."

"I used to read a lot of science fiction, before it became too soft-centered," Hewlitt said dryly. Then he turned to Screnagle. "I shall require additional measurements, sir, since I shall be building something a little more ambitious than a blanket. And it will be necessary to draft patterns for the garments as I go along. Making up, fitting, and finishing will take time if the work is to be done properly. I shall therefore board up the broken pane and attach a notice saying that I am closed for alterations . . ." He looked along Screnagle's extra-terrestrial body contours and thought, *There will probably be a lot of alterations.* "And I shall, of course, work on this order exclusively. But I cannot see it being completed in less than ten days."

"You have twelve days," said Fox, looking relieved. "I shall have the broken pane replaced as soon as possible. During our investigation your shop front was photographed, so we shall be able to reproduce the gold let-

tering. After all, the breakage was indirectly my fault."

"I venture to disagree," Screnngle broke in. "As the prime cause of the trouble, I would be obliged, Mr. Hewlitt, if you would allow me to replace the glass from material in my ship as a memento of my visit. The material is transparent and proof against both meteorite collisions and minor emotional disturbances."

"You are very kind, sir," said Hewlitt, laughing, "I accept." He wrote on the measurement pad, *From center back to wrist, 35 inches.*

It took nearly three hours to complete the job to his satisfaction, including a half-hour's discussion regarding the musculature and jointing of the limbs and torso and the provision needed to give comfort as well as style to the garments, particularly in the areas of the neck, chest, armpits, and crotch.

When Screnngle and Fox left, Hewlitt locked the door and climbed the stairs past his first-floor stockrooms to the flat above to break the news to his wife.

Mrs. Hewlitt had been a virtual cripple since a street accident eighteen years earlier. She could walk about the flat for three hours a day without too much discomfort, and these hours she saved for the evening meal and for talking to her husband afterwards. The rest of the time she spent rolling about the flat in her wheelchair, tidying, cooking, sewing if there was work for her to do, or sleeping, which she did not do very well even at night.

He told her about his extraterrestrial client, and of the necessity for keeping the matter a close secret for the time being. She studied his sketches and measurements with interest, working out the yardages of material and trimmings needed for the job. Hewlitt should be ashamed of himself, she said, for trying to make her believe such a tall story. She reminded him that in her youth she once had to make a costume for a stage horse. The reason for the number of costumes required, particularly the sets of underwear, was unclear, she said; but no doubt they were being used in a sophisticated pantomime or farce in which the stage horse was expected to partially disrobe. The detail required in the fly fasten-

ings, she added disapprovingly, probably meant that it was a very sophisticated and *naughty* show.

"Not at all, dear," said Hewlitt with a perfectly straight face. "It will be more in the nature of a spectacular, and you'll be able to see the highlights, and our costumes, on TV."

Hewlitt, who had always held moral cowardice to be the better part of valor, noted her pleased and excited expression and said nothing more.

During the three days and for most of the intervening nights before Screnagle was due for his first fitting, the pleasure and the sense of excitement remained with Mrs. Hewlitt, even though on one occasion she said that there had been a time when they would have refused such a gimmicky commission. Hewlitt replied by saying that the work required the highest standards of tailoring and finish, regardless of its ultimate destination, and that the work was the most professionally challenging as well as the most remunerative he had ever been given. But secretly he was becoming prey to self-doubts.

His problem was to design, cut, and build a suit which would not make a horse look like a man but like a very well-dressed and dignified horse. The whole idea was ridiculous, yet Screnagle was much too important a personage to be left open to the slightest suggestion of ridicule.

As Hewlitt had expected, the first fitting was visually a disaster. The fore and hind trouser legs were unpressed, shapeless, and held together temporarily with tacking stitches, while the embryo morning coat looked even worse with just one sleeve attached and tacking cotton holding together the lapel canvas, fronts, and shoulder wadding. While he plied his needle, chalk, and pins, Hewlitt transmitted confidence and reassurance for all he was worth; but it was obvious that neither Screnagle nor Fox was receiving.

The Foreign Office official looked desperately worried and unhappy, and the pattern of wrinkling and puckering on the ambassador's features was almost certainly the extraterrestrial equivalent of these emotions.

Hewlitt kept this own doubts to himself and did his best to retrieve something from the situation by producing the first two sets of underwear, both of which fitted perfectly. He explained that these were relatively simple garments made from material which stretched and clung. He ignored the hints dropped by both Scrennagle and Fox that it might, after all, be better to settle for the horse blanket over underwear idea, and he requested a second fitting in four days time.

Scrennagle's jacket was a large and structurally complex garment which covered not only the forward torso but the body back to the hind quarters. It was cut away sharply at the front, after which the skirt maintained a level line two inches below the point where the legs joined the body. But the jacket, because of the length and area of material used, made the trouser-clad legs look disproportionately thin.

Hewlitt apparently had been able to reduce the area of the jacket by introducing a set of false pleats running along the spine and dividing at the tail opening; and he had used a series of strategically placed darts to shape the garment at awkward body contours. But he had had to scrap and recut the original trousers, making them nearly twice as wide but with a neat taper to approximately double the hoof diameter at the bottoms. This meant redesigning the method of suspension across the back and modifying the crotch, but the over-all effect looked much better balanced.

During the second fitting Hewlitt was pleased to find that he had been able to cure a troublesome tendency to crease where the foreleg muscles periodically distorted the waistcoat while Scrennagle was walking. But the garments, to Scrennagle's and Fox's untutored eyes, still looked like the proverbial pound of tripe. It was obvious that they were both coming to a decision—almost certainly the wrong one—and Hewlitt tried desperately to head them off.

"We are extremely lucky," he said, smiling, "in that a size 16 neckband shirt is a perfect fit on you, sir, as is a size 8 hat. The hat will be carried rather than worn for

the most part, likewise the gloves, which don't quite fit—"

"Don't you think," said Fox suddenly, "that you may be trying for the impossible, Mr. Hewlitt?"

More quietly, Scrennagle joined in. "This is by no means a criticism of your professional ability, and you may well produce the garments required; but wouldn't you agree that something in the nature of the blanket already discussed would serve as a useful standby? It would also relieve you of a heavy responsibility."

"I did not ask to be relieved of the responsibility," said Hewlitt. The responsibility was beginning to scare him sick. He really should take this easy way out—but he had too much confidence, or perhaps over-confidence, in his ability. He went on, "I have undertaken to clothe you suitably for the forthcoming social and formal occasions, sir, and you can trust me to fullfil my obligations.

"However," Hewlitt continued quickly, "I have a minor problem regarding foot coverings. The black woolen socks can be adapted and cut to fit, but Earth-type shoes would look out of place and would be difficult for you to wear with confidence. Would it be possible to use a non-toxic paint to color the osseous material of your hooves—glossy black for the formal occasion and brown for the walkabouts? They should also be padded, since hoof sounds might also be considered out of place." *It would make you sound too much like a horse,* Hewlitt said silently. Aloud: "And there is the matter of displaying the tail, sir. It is a long, luxuriant, and remarkably handsome tail—"

"Thank you," said Scrennagle.

"—but it is constantly in motion and likely to be a distraction to people holding a conversation with you. Mr. Fox tells me that these movements are involuntary. However, as I see it, your tail is analogous to the cranial and/or facial hair in an Earth-person. Those who have such hair frequently display it to the best advantage on formal occasions. It can be pleated, braided, decorated in various fashions, and combed or oiled to give it a

richer texture. If you have no objections, sir, we might plait your tail, adding, say, a few lengths of white or silver cord, then coil it neatly and secure it with a retaining strap which I can add to the center seam?"

"I have no objections, Mr. Hewlitt," said Screnagle. "We do something similar on Dutha."

"These are details, Hewlitt," said Fox. "Important details, I admit, which will apply to whatever type of garment is worn. But—"

"There is also the matter of decorations, sir," Hewlitt continued. "These are colored ribbons and pieces of engraved metal which indicate that the person wearing them has achieved some great feat, or that an ancestor has done so. The evening reception will include many people wearing dress uniforms and full evening wear to which are added the kind of decorations I have been describing. I would like you to wear some kind of decoration or award," he went on seriously, "but preferably one that has not simply been invented for the occasion. Can you suggest something which might be suitable, sir?"

Screnagle was silent for a moment, then he said, "My race has no equivalent of these awards, except possibly the translator which is necessary to the performance of my work. There is a somewhat larger version, decorated with the Federation symbol, which is worn when more than one translation has to be handled at the same time. But these, also, are merely the tools of our profession."

"But it is not a common profession, surely?"

"It is not," said Screnagle. The expression which twisted the alien features might have been one of pride.

"Would you have any objections to displaying this device on a colored ribbon?"

"No objections."

"Thank you, sir," Hewlitt said. He went on briskly, "The morning wear will be ready for collection before breakfast time on the day required, and the evening wear in the afternoon of the same day. Your walking-out suits and accessories, which will not be required until your list of formal visits is complete, will be much

easier to make as a result of experience gained with the first garments—"

"Which will be," said Fox very firmly, "a well-cut and tastefully decorated blanket."

Hewlitt pretended to ignore him as he said, "You may trust me, sir."

"I am trusting you, Mr. Hewlitt, more than any other person on this planet . . ."

Long after they had gone, Hewlitt thought about Screnngle's parting remark. While his wife and he worked on the recutting and finishing of the first outfit, he worried. Was he being a stupid, self-opinionated, sartorial snob or did he really have the right to dictate to Screnngle as he had been doing?

The ambassador was an extremely important being who was, in the way of all representatives of other governments, anxious to make a good impression. But he would also be receiving impressions, favorable or otherwise, from the people he was meeting. Being realistic about it, the latter impressions were the more important as far as the human race was concerned. In all probability Screnngle was important enough to make the decision whether his world and the rest of the Federation maintained contact with Earth or left it strictly alone.

And this was the being that he, a conceited and impoverished little tailor, was going to dress for the most important occasion in human history. He was, of course, going to dress him to the best of his ability; but the media were fond of poking fun at VIP's. Given half a chance, they would tear Screnngle apart; and the ambassador would go away and neither he nor his friends would ever return to the place where the people lacked manners and where the Federation representative had been made to look a fool.

Many times while he was reopening a seam to remove an unsightly fullness or while giving the pockets the swelled edges that were his own particular signature on a suit, he thought about putting aside the work for the few hours necessary for him to make a blanket. He thought about it long and seriously, but he kept working

on the job in hand while he was making up his mind. When he and his wife went to bed in the early hours of the following morning, and arose to resume work a short time later, he still had not made up his mind.

Producing a glorified horse blanket would be insurance against the dress wear turning out to be a sartorial disaster. But if he made the blanket he would simply be obeying orders and shifting the responsibility back to Fox. He would also be allowing a man who knew less than he did to tell him what to do.

Then suddenly the morning coat and trousers were finished, pressed, and hanging with their accessories on the form which Hewlitt had adapted from the limbs and torsos of one and a half window-display models; and there was no longer enough time to make a blanket because it was the morning of *The* Day and Scrennagle was due at any moment.

The ambassador said little while Hewlitt was showing him how to fasten the shirt, knot the tie, and fit, among other items, the footless dark socks over his black-painted hooves. While fitting the trousers, waistcoat, and jacket the tailor talked about the desirability of moving slowly—sudden movements lacked dignity and looked bad on TV. He was aware that he was talking too much and that he was making himself sound ridiculous by punctuating every few words with a yawn.

Perhaps Scrennagle would not realize how nervous and unsure of himself Hewlitt felt because the over-all ensemble did not look exactly as he had envisaged it—and in his present physical and mental state of fatigue he did not know what it looked like.

During the proceedings Fox maintained the tightest-lipped silence he had ever experienced; but he tossed Hewlitt a copy of the morning paper and nodded worriedly as they left.

The news about Scrennagle was published as a Court Circular:

> His Excellency the Lord Scrennagle of Dutha will be received in audience by the Queen this

> morning, and will present his Letters of Credence as Ambassador Extraordinary and Plenipotentiary from the Galactic Federation to the Court of St. James. A State Reception will be held in his honor at the Palace, during which sound and vision broadcast facilities will be available.

Hewlitt moved the TV into his workroom so that he could watch without disturbing his wife, who was still asleep, while he worked on the evening suit.

But the TV coverage was unsatisfactory. Apparently the Court Circular had been treated by the press as some kind of hoax. A tourist had been able to film Screnngle's arrival at St. James', and he would probably receive a fortune for a few feet of badly focused film which did not give any indication of how well or otherwise the ambassador's suit fitted him.

Hewlitt waited for a couple of hours, then switched on his transistor radio to hear an excited voice saying that news had just been received from the Palace to the effect that Dutha was an inhabited planet circling a sun some two thousand light-years from Earth and that the Duthan, Screnngle, was being accorded the honors of a visiting head of state as well as those of an ambassador. Whether the whole thing was a hoax or not, the voice went on, tonight's reception would be covered to the same extent as the early moon landings.

His wife heard the same news item. She looked dreadfully tired but happier than he had seen her for a great many years. But she was not talking to him for the time being because he had told her the truth and had deliberately made it sound like a lie.

Hewlitt's mind and fingers were so stiff and tired that he was almost an hour late in completing the suit. But that did not matter: Screnngle did not call for it. Just two hours before the reception was due to begin, a uniformed inspector arrived to say that there had been unforeseen delays and that he would collect the outfit and take it to Screnngle's ship. A few minutes later, a more senior police officer arrived to say that since there was

no longer any need for secrecy they were removing the screens from his shop front and that a couple of glaziers had also arrived to replace his door window.

"Can't it wait until morning?" Hewlitt asked, clenching his teeth to fight back a yawn.

"You look very tired, sir," the policeman said. "I would be happy to stay here until they've finished, and lock the door as I leave. I'll put your key in the letterbox."

"That is very considerate of you," said Hewlitt warmly. "I do need rest. Thank you."

"My pleasure, sir," said the officer, so respectfully that he seemed to be ready to salute.

The warm feeling left by the unusually friendly policeman faded as Hewlitt mounted the stairs. He thought about the probable reasons why Screnngle had sent for his suit rather than collect it himself. The outfit he had worn this morning had probably been a mess, and this evening he would be wearing a horse blanket tailored on short notice by someone else. Being a diplomat and a considerate being as well, Screnngle would not want to complain in person to Hewlitt, or to pass on the criticisms which had doubtless been made about his appearance. He would simply take delivery of the second outfit and say nothing.

But Hewlitt's misery was short-lived. As he slumped into his chair before the TV screen, a panel of experts were discussing the implications of contact with an extra-solar race, and pundits always put him to sleep.

The first few bars of the fanfare which opened the late-night newscast, especially extended to cover the visit of the extraterrestrial, jerked Hewlitt awake. Quickly he wheeled his wife in from the kitchen, then settled back to see how Screnngle had comported himself.

Unlike the amateur film taken at St. James', Screnngle's arrival for the reception was covered in close-up, middle distance, and from every angle.

The ambassador was *not* wearing a horse blanket.

His jacket was a good fit at the collar and shoulders, but showed a tendency to wrinkle across the back when

Screnngle straightened after making a bow—something he had to do every few minutes. The trousers hung well, making the legs look neither too blocky nor too thin, and the black socks and dully polished hooves were elegantly inconspicuous. The tail was coiled and tied forward like that of some heraldic beast, and its occasional twitchings were barely noticeable.

The only touch of color was the wide silk ribbon that diagonally bisected the white shirt front and waistcoat. It was pale blue with a thin edging of red and gold on which was centered the intricately decorated translation device which bore the symbol of the Federation. Although not the most impressive decoration there, it still managed to hold its own among all the Baths and Garters.

Screnngle of Dutha, Hewlitt realized suddenly, looked *well* . . .

Then the Duthan was making his speech, outlining briefly the purpose of his visit and touching on some of the advantages which membership in the Galactic Federation would confer in both directions.

It had been just over one hundred and fifty years earlier that one of the Federation's unmanned searchships found intelligent life and a rapidly developing technology on Earth. The long delay in responding to the situation, Screnngle explained, was due to the fact that the searchships—which rarely found anything—were not fitted with power-hungry, ultimate drive because machinery, unlike Duthans, Earth-humans, and members of other intelligent species, did not age or become bored. The searchship had spent many years in orbit photographing, analyzing, evaluating specimens of flora and fauna, the written and spoken languages—the last being particularly difficult for its soft-landed probes to obtain because radio and television had not then been invented.

When the data had been returned to Dutha for study, several difficult decisions had had to be taken. There was, of course, no question that contact should not be attempted with the rich and varied cultures on Earth. But at the time the material had been gathered, many

sociopolitical groupings were showing signs of imminent collapse while others were rapidly growing in power and influence.

At that time the British Empire, with its center of power and commerce in London, was the most important and influential grouping, but it, too, was showing signs of collapse. It had grown slowly, however, and its traditions and laws were deeply rooted. The indications were that it would collapse not catastrophically, but wane slowly and disintegrate in a stable fashion. It was also thought that the manners and practices observed a century and a half earlier would not significantly alter in such a long-lived grouping . . .

"That is why I landed quietly in this country rather than in one of the others," Scrennagle continued. "I now know that the decision was the correct one. But we, too, have certain rules of behavior in these circumstances. You might think that for a highly advanced Galactic culture we are surprisingly old-fashioned. But an acceptable code of behavior plays a vital part in dealings between species so widely varied as the members of our Federation.

"One of our strictest rules," he added, wrinkling his facial openings in what was undoubtedly a smile, "is that visitors such as myself conform to all of the social practices and customs of the host planet, even to the extent of wearing its clothing . . ."

He concluded by saying that his intention was to make a round of official visits to heads of state on Earth. Then, later, he would return to take a leisurely, sightseeing tour of the planet which would enable him to meet people in more relaxed conditions. He added that Earth had been the first new world to be offered membership in something over four centuries, and he would be happy to answer questions on every subject under this or any other sun.

The next item was the TV interview, during which, at long last, the subject of Scrennagle's clothing came up.

". . . we will need much more time to consider the wider aspects of your visit," the interviewer was saying,

"but right now, Your Excellency, I would like to ask a question, and also compliment you, on your clothing. Or perhaps I should compliment your extraterrestrial tailor?"

"You should compliment my terrestrial tailor," Scrennagle said, then went on: "On many worlds clothing is simply a means of giving protection from extremes of weather, while on others the fabrication, styling, and wearing of clothing has been raised to the level of a major art form. Earth is in the latter category and possesses at least one tailor who is capable of making an extraterrestrial . . . presentable."

The interviewer laughed and asked, "Who is he, Your Excellency?"

"I would rather not say at present," Scrennagle replied. "He and his wife have worked long and hard, and they deserve at least one night's sleep before fame descends on them. Suffice it to say that my tailor is relatively unknown but a craftsman of the highest order. He is also something of a tyrant in sartorial matters, a characteristic common to tailors throughout the Galaxy. He is not afraid to accept a professional challenge, as you can see."

"Yes, indeed," said the interviewer.

"No doubt there will be other challenges," Scrennagle went on, turning his face directly into the camera, but Hewlitt knew that he was not speaking solely to the interviewer. "My race was chosen to make first contact with Earth-humans simply because my people most closely resembled yours—despite what you must think are major physiological differences. Other races in the Federation have much more varied and interestingly arranged limbs and appendages; and to the uninitiated they may even appear to be quite horrendous. But ambassadors from all these species in time will visit Earth to present their credentials and their good wishes. And they will all require to be suitably attired for the occasion. They will be very pleased and reassured to know," he ended, "that there is an Earth-human tailor in whom they can place their complete trust . . ."

The intense feelings of pride and excitement which should have kept him awake that night, but did not, were with him in undiminished intensity when he opened the shop next morning. His reflection in the store window opposite looked the same as always, but something different about the reflected picture made him turn around quickly.

The new door pane was not quite the same as the old one. It now read GEORGE L. HEWLITT, TAILOR, centered above a beautifully executed copy of the design which appeared on Screnngle's translator—the symbol which represented all the worlds of the Galactic Federation—followed by the words BY APPOINTMENT. ☆

Stuck with It

Hal Clement

1

The light hurt his closed eyes, and he had a sensation of floating. At first, that was all his consciousness registered, and he could not turn his head to get more data. The pain in his eyes demanded some sort of action, however.

He raised an arm to shade his face and discovered that he really was floating. Then, in spite of the stiffness of his neck, he began to move his head from side to side and saw enough to tell where he was. The glare which hurt even through the visor of his airsuit was from Ranta's F5 sun; the water in which he was floating was that of the living room of Creak's home.

He was not quite horizontal; his feet seemed to be ballasted still, and were resting on some of the native's furniture a foot or so beneath the surface of the water.

Internally, his chest protested with stabs of pain at every breath he took; his limbs were sore, and his neck very stiff. He could not quite remember what had happened, but it must have been violent. Almost certainly, he decided as he made some more experimental motions, he must have a broken rib or two, though his arms and legs seemed whole.

His attempts to establish the latter fact caused his feet to slip from their support. They promptly sank, pulling him into the vertical position. For a moment he sub-

merged completely, then drifted upward again and finally reached equilibrium, with the water line near his eyebrows.

Yes, it was Creak's house, all right. He was in the corner of the main room, which the occupants had cleared of some of its furniture to give him freedom of motion. The room itself was about three meters deep and twice as long and wide, the cleared volume representing less than a quarter of the total. The rest of the chamber was inaccessible to him, since the native furniture was a close imitation of the hopelessly tangled, springy vegetation of Ranta's tidal zones.

Looped among the strands of flexible wood, apparently as thoroughly intertwined as they, were two bright forms which would have reminded a terrestrial biologist of magnified Nereid worms. They were nearly four meters long and about a third of a meter in diameter. The lateral fringes of setae in their Earthly counterparts were replaced by more useful appendages—thirty-four pairs of them, as closely as Cunningham had been able to count. These seemed designed for climbing through the tangle of vegetation or furniture, though they could be used after a fashion for swimming.

The nearer of the orange-and-salmon-patterned forms had a meter or so of his head end projecting into the cleared space, and seemed to be eyeing the man with some anxiety. His voice, which had inspired the name Cunningham had given him, reached the man's ears clearly enough through the airsuit in spite of poor impedance matching between air and water.

"It's good to see you conscious, Cun'm," he said in Rantan. "We had no way of telling how badly you were injured, and for all I knew I might have damaged you even further bringing you home. Those rigid structures you call 'bones' make rational first aid a bit difficult."

"I don't think I'll die for a while yet," Cunningham replied carefully. "Thanks, Creak. My limb bones seem all right, though those in my body cage may not be. I can probably patch myself up when I get back to the ship. But what happened, anyway?"

The man was using a human language, since neither being could produce the sounds of the other. The six months Cunningham had so far spent on Ranta had been largely occupied in learning to understand, not speak, alien languages; Creak and his wife had learned only to understand Cunningham's, too.

"Cement failure again." Creak's rusty-hinge phonemes were clear enough to the man by now. "The dam let go, and washed both of us through the gap, the break. I was able to seize a rock very quickly, but you went quite a distance. You just aren't made for holding on to things, Cun'm."

"But if the dam is gone, the reservoir is going. Why did you bother with me? Shouldn't the city be warned? Why are both of you still here? I realize that Nereis can't travel very well just now, but shouldn't she try to get to the city while there's still water in the aqueduct? She'll never make it all that way over dry land—even you will have trouble. You should have left me and done your job. Not that I'm complaining."

"It just isn't done." Creak dismissed the suggestion with no more words. "Besides, I may need you; there is much to be done in which you can perhaps help. Now that you are awake and more or less all right, I will go to the city. When you have gotten back to your ship and fixed your bones, will you please follow? If the aqueduct loses its water before I get there, I'll need your help."

"Right. Should I bring Nereis with me? With no water coming into your house, how long will it be habitable?"

"Until evaporation makes this water *too* salt—days, at least. There are many plants and much surface; it will remain breathable. She can decide for herself whether to fly with you; being out of water in your ship when her time comes would also be bad, though I suppose you could get her to the city quickly. In any case, we should have a meeting place. Let's see—there is a public gathering area about five hundred of your meters north of the apex of the only concave angle in the outer wall. I can't think of anything plainer to describe. I'll be there

when I can. Either wait for me, or come back at intervals, as your own plans may demand. That should suffice. I'm going."

The Rantan snaked his way through the tangle of furniture and disappeared through a narrow opening in one wall. Listening carefully, Cunningham finally heard the splash which indicated that the native had reached the aqueduct—and that there was still water in it.

"All right, Nereis," he said. "I'll start back to the ship. I don't suppose you want to come with me over even that little bit of land, but do you want me to come back and pick you up before I follow Creak?"

The other native, identical with her husband to human eyes except for her deeper coloration, thought a moment. "Probably you should follow him as quickly as you can. I'll be all right here for a few days, as he said —and one doesn't suggest that someone is wrong until there is proof. You go ahead without me. Unless you think you'll need *my* help; you said you had some injury."

"Thanks, I can walk once I'm out of the room. But you might help me with the climb, if you will."

Nereis flowed out of her relaxation nook in the furniture, the springy material rising as her weight was removed.

The man took a couple of gentle arm strokes, which brought him to the wall. Ordinarily he could have heaved himself out of the water with no difficulty, but the broken ribs made a big difference. It took the help of Nereis, braced against the floor, to ease him to the top of the two-meter-thick outer wall of unshaped, cemented rocks and gravel. He stood up without too much difficulty once there was solid footing, and stood looking around briefly before starting to pick his way back to the *Nimepotea.*

The dam lay only a few meters to the north; the break Creak had mentioned was not visible. He and the native had been underwater in the reservoir more than a quarter-kilometer to the west of the house when they had been caught by the released waters. Looking in that

direction, he could see part of the stream still gushing, and wondered how he had survived at all in that turbulent, boulder-studded flood. Behind the dam, the reservoir was visibly lower, though it would presumably be some hours before it emptied.

He must have been unconscious for some time, he thought: it would have taken the native, himself almost helpless on dry land, a long time indeed to drag him up the dam wall from the site of the break to the house, which was on the inside edge of the reservoir.

East of Creak's house, extending south toward the city, was the aqueduct which had determined his selection of a first landing point on Ranta. Beyond it, some three hundred meters from where he stood, lay the black ovoid of his ship. He would first have to make his way along the walls of the house—preferably without falling in and getting tangled in the furniture—to the narrow drain that Creak had followed to the aqueduct, then turn upstream instead of down until he reached the dam, cross the dam gate of the aqueduct, and descend the outer face of the dam to make his way across the bare rock to his vessel.

Southward, some fifteen kilometers away, lay the city he had not yet visited. It looked rather like an old labyrinth from this viewpoint, since the Rantans had no use for roofs and ceilings. It would be interesting to see whether the divisions corresponded to homes, streets, parks, and the like; but he had preferred to learn what he could about a new world from isolated individuals before exposing himself to crowds. Following his usual custom, Cunningham had made his first contact with natives who lived close enough to a large population center to be in touch with the main culture, yet far enough from it to minimize the chance of his meeting swarms of natives until he felt ready for them. This policy involved assumptions about culture and technology which were sometimes wrong, but had not so far proven fatally so.

He splashed along the feeder that had taken Creak to the aqueduct and reached the more solid and heavy wall of the main channel.

The going was rough, since the Rantans did not appear to believe in squaring or otherwise shaping their structural stone. They simply cemented together fragments of all sizes down to fine sand until they had something watertight. Some of the fragments felt a little loose underfoot, which did not help his peace of mind. Getting away with his life from one dam failure seemed to be asking enough of luck.

However, he traversed the thirty or forty meters to the dam without disaster, turned to his right, and made his way across the arch supporting the wooden valve. This, too, reflected Rantan workmanship. The reedlike growths of which it was made had undergone no shaping except for the removal of an outer bark and—though he was not sure about this—the cutting to some random length less than the largest dimension of the gate. Thousands of the strips were glued together both parallel and crossed at varying angles, making a pattern that strongly appealed to Cunningham's artistic taste.

Once across, he descended the gentle south slope of the dam and made his way quickly to the *Nimepotea.*

An hour later, still sore but with his ribs knitted and a good meal inside him, he lifted the machine from the lava and made his way south along the aqueduct, flying slowly enough to give himself every chance to see Creak. The native might, of course, have reached the city by now; Cunningham knew that his own swimming speed was superior to the Rantan's, but the latter might have been helped by current in the aqueduct. The sun was almost directly overhead, so it was necessary to fly a little to one side of the watercourse to avoid its hot, blinding reflection.

He looked at other things than the channel, of course. He had not flown since meeting Creak and Nereis, so he knew nothing of the planet save what the two natives had told him. They themselves had done little traveling, their work confining them to the reservoir and its neighborhood, the aqueduct, and sometimes the city. Cunningham had much to learn.

The aqueduct itself was not a continuous channel, but

was divided into lower and lower sections, or locks. These did not contain gates—rather to the man's surprise—so that flow for the entire fifteen-plus kilometers started or stopped very quickly according to what was happening at the dam. To Cunningham, this would seem to trap water here and there along the channel, but he assumed that the builders had had their reasons for the design.

He approached the city without having sighted Creak, and paused to think before crossing the outer wall. He still felt uneasy about meeting crowds of aliens; there was really no way of telling how they would react. Creak and Nereis were understandable individuals, rational by human standards; but no race is composed of identical personalities, and a crowd is not the simple sum of the individuals composing it—there is too much person-to-person feedback.

The people in the city, or some of them, must by now know about him, however. Creak had made several trips to town in the past few months, and admitted that he had made no secret of Cunningham's presence. The fact that no crowds had gathered at the dam suggested something not quite human about Rantans, collectively.

They might not even have noticed his ship just now. He was certainly visible from the city; but the natives, Creak had told him, practically never paid attention to anything out of water unless it was an immediate job to be done.

Cunningham had watched Creak and Nereis for hours before their first actual meeting, standing within a dozen meters of them at times while they were underwater. Creak had not seen him even when the native had emerged to do fresh stonework on the top of the dam; he had been using a lorgnette with one eye, and ignoring the out-of-focus images which his other eyes gave when out of water; though, indeed, his breathing suit for use out of water did not cover his head, since his breathing apparatus was located at the bases of his limbs. Creak had simply bent to his work.

It had been Nereis, still underwater, who saw the grotesquely refracted human form approaching her husband and hurled herself from the water in between the two. This had been simple reflex; she had not been on guard in any sense. As far as she and Creak appeared to know, there was no land life on Ranta.

So the city dwellers might not yet have noticed him, unless— No, they would probably dismiss the shadow of the *Nimepotea* as that of a cloud. In any case, knowledge of him for six months should be adequate preparation. He could understand the local language, even if the locals would not be able to understand him.

He landed alongside the aqueduct at a few meters from the point where it joined the city wall. He had thought of going directly to the spot specified by Creak, but decided first to take a closer look at the city itself.

Going outside was simple enough; an airsuit sufficed. He had been maintaining his ship's atmosphere at local total pressure, a little over one and three-quarter bars, to avoid the nuisances of wearing rigid armor or of decompression on return. The local air was poisonous, however, since its oxygen partial pressure was nearly three times Earth's sea-level normal; but a diffusion selector took care of that without forcing him to worry about time limits.

Cunningham took no weapons, though he was not assuming that all Rantans would prove as casually friendly as Creak and Nereis had done. He felt no fear of the beings out of water, and had no immediate intention of submerging.

The aqueduct was almost five meters high, and a good deal steeper than the outer wall of Creak's house. However, the standard rough stonework gave plenty of hand- and toehold, and he reached the top with little trouble. A few bits of gravel came loose under his feet, but nothing large enough to cost him any support.

Water stood in this section of aqueduct, but it had stopped flowing. At the south end it was lapping at the edge of the city wall itself; at the north end of this lock, the bottom was exposed though not yet dry. He walked

in this direction until he reached the barrier between this section and the next, noting without surprise that the latter also had water to full depth at the near end. There was some seepage through the cemented stone—the sort that Creak had always been trying to fix at the main dam.

Finally approaching the city wall, he saw that its water was only a few centimeters below that in the adjoining aqueduct section. He judged that there was some remaining lifetime for the metropolis and its inhabitants, but was surprised that no workers were going out to salvage water along the aqueduct. Then he realized that their emergency plans might call for other measures first. After all, the dam would have to be repaired before anything else was likely to do much good. No doubt Creak would be able to tell him about that.

In the meantime, the first compartment, or square, or whatever it was, should be worth looking over. Presumably it would have equipment for salting the incoming water, since the natives could not stand fresh water in their systems. A small compartment in Creak's house had served this purpose—as it was explained to him. However, he saw nothing here of the racks for supporting blocks of evaporated sea salt just below the surface, nor supplies of the blocks stored somewhere above the water, nor a crew to tend the setup. After all, salting the water for a whole city of some thirteen square kilometers would have to be a pretty continuous operation.

The compartment was some fifty meters square, however, and could have contained a great deal not visible from where he stood on the wall; and there was much furniture—in this case, apparently, living vegetation—within it. He walked around its whole perimeter—in effect, entering the city for a time, though he saw no residents and observed no evidence that any of them saw him—but could learn little more.

The vegetation below him seemed to be of many varieties, but all consisting of twisted, tangled stems of indefinite length. The stems' diameters ranged from that of a human hair to that of a human leg. Colors tended

to be brilliant, reds and yellows predominating. None of the vegetation had the green leaves so nearly universal on photosynthetic plants, and Cunningham wondered whether these things could really represent the base of the Rantan food pyramid.

If they did not, then how did the city feed itself, since there was nothing resembling farm tanks around it? Maybe the natives were still fed from the ocean—but in that case, why did they no longer live in the ocean?

Cunningham had asked his hosts about that long before but obtained no very satisfactory answer. Creak appeared to have strong emotional reactions to the question, regarding the bulk of his compatriots in terms which Cunningham had been unable to work into literal translation but what were certainly pejoratives—sinners, or fools, or something like that. Nereis appeared to feel less strongly about the matter, but had never had much chance to talk when her husband got going on the subject. Also, it seemed to be bad Rantan manners to contradict someone who had a strong opinion on any matter; the natives, if the two he had met were fair examples, seemed to possess to a limitless degree the human emotional need to be right. In any case, the reason why the city was on land was an open question and remained the sort of puzzle that retired human beings needed to keep them from their otherwise inevitable boredom. Cunningham was quite prepared to spend years on Ranta, as he had on other worlds.

Back at the aqueduct entrance, though now on its west side, Cunningham considered entering the water and examining the compartment from within. Vegetation was absent at the point where freshwater entered the city wall and first compartment, so, he figured, it should be possible to make his way to the center. There things might be different enough to be worth examining, without the danger of his getting trapped as he had been once or twice in Nereis' furniture before she and her husband had cleared some space for him.

It was not fear that stopped him, though decades of wandering in the *Nimepotea* and her predecessors had

developed in Cunningham a level of prudence which many a less mature or experienced being would have called rank cowardice. Rather, he liked to follow a plan where possible, and the only trace of a plan he had so far developed included getting back in contact with Creak.

While considering the problem, he kicked idly at the stonework on which he was standing. So far from his immediate situation were his thoughts that several loose fragments of rock lay around him before they caught his attention. When they did, he froze motionless, remembering belatedly what had happened when he was climbing the wall.

Rantan cement, he had come to realize, was generally remarkable stuff—another of the mysteries now awaiting solution in his mental file. The water dwellers could hardly have fire or forges, and quite reasonably he had seen no sign of metal around Creak's home or in his tools. It seemed unlikely that the natives' chemical or physical knowledge could be very sophisticated, and the surprise and interest shown by Creak and Nereis when he had been making chemical studies of the local rocks and their own foodstuffs supported this idea. Nevertheless, their glue was able to hold rough, unsquared fragments of stone, and untooled strips of wood, with more force than Cunningham's muscles could overcome. This was true even when the glued area was no more than a square millimeter or two. On one of his early visits to Creak's home, Cunningham had become entangled in the furniture and been quite unable to break out, or even separate a single strand from its fellows.

But now stones were coming loose under his feet. He had strolled a few meters out along the aqueduct wall again while thinking, and perhaps having this stretch come apart under him would be less serious than having the city start doing so, but neither prospect pleased. Even here a good deal of water remained, and being washed out over Ranta's stony surface again . . .

No. Be careful, Cunningham! You came pretty close to being killed when the dam gave way a few hours ago.

And didn't Creak say something like "Cement failure again" that time? Was the cement, or some other key feature of the local architecture, proving less reliable than its developers and users expected? If so, why were they only finding it out now, since the city must have been here a long time? *Could an Earthman's presence have anything to do with it?* He would have to find out, tactfully, whether this had been going on for more than the six months he had been on the planet.

More immediately, was the pile of rock he was standing on now going to continue to support him? If it collapsed, what would the attitude of the natives be, supposing he was in a condition to care? A strong human tendency exists, shared by many other intelligent species, to react to disaster by looking for someone to blame. Creak's and Nereiss' noticeable preference for being right about things suggested that Rantans might so react. All in all, getting off the defective stonework seemed a good idea.

Walking as carefully as he could, Cunningham made his way upstream along the lock. He felt a little easier when he reached the section where the bottom was exposed and there was no water pressure to compound the stress or wash him out among the boulders.

He would have crossed at this point, and climbed the opposite wall to get back to his ship, but the inner walls of the conduit were practically vertical. They were quite rough enough to furnish climbing holds, but the man had developed a certain uneasiness about putting his weight on single projecting stones. Instead, he went up the wall—now dry—between the last two locks and crossed this. It held him, rather to his surprise, and with much relief he made his way down the more gradual slope on the other side to the surface rock of the planet, climbed to and through *Nimepotea*'s air lock, and lifted his vessel happily off the ground.

2

Hovering over the center of the city, he could see that it was far from deserted; though it was not easy to identify individual inhabitants even from a few meters up. Most of the spaces, even those whose primary function seemed to correspond to streets, were cluttered with plant life. The Rantans obviously preferred climbing through the stuff to swimming in clear water. But the plants formed a tangle through which nothing less skillful than a Rantan or a moray eel could have made its way. Sometimes the natives could be seen easily in contrast to the plants, but in other parts of the city they blended in so completely that Cunningham began to wonder whether the compartment he had first examined had really been deserted, after all.

He could not, of course, tell if the creatures were aware of real trouble. It was impossible to interpret everything he saw, even as he dropped lower, but Cunningham judged that schools were in session, meals were being prepared, with ordinary craftwork and business being conducted by the majority of the natives. At least *some* ordinary life-support work was going on, he saw. To the southeast of the city, partly within the notch where the wall bent inward to destroy the symmetry of its four-kilometer square, and just about at high-tide mark, he noticed a number of structures that were obviously intended for the production of salt by evaporation. The tide was now going out, and numerous breathing-suited Rantans—with lorgnettes—were closing flood gates to areas that had just filled with sea water. Others were scraping and bagging deposits of brownish material in areas where the water had evaporated. Further from the ocean, similar bags had been opened and were lying in the sun, presumably for more complete drying, under elevated tentlike sheets of the same transparent fabric Creak had used for his workbag. In fact, most of the beings laboring outside the city walls dragged similar bags with them.

No one seemed to be working now in these upper drying spaces; this was the closest evidence Cunningham could see that city life had been at all disturbed. But naturally, if no water were coming in from the reservoir, no salt would be needed immediately. That was all he could infer from observation; for more knowledge, he would have to ask Creak.

The meeting place was now fairly easy to spot: a seventy-meter-square "room" with much of the central portion clear of vegetation, located above the corner which cut into the southeastern part of the city. As he approached this area and settled downward, Cunningham could see that there were a number of natives—perhaps a hundred—in the clear portion. How many might be in the vegetation near the edges, he had no way to tell. He could see no really clear place to land, but once the bottom of the hull entered the water the pilot eased down slowly enough to give those below every chance to get out from under. The water was about five meters deep, and when the *Nimepotea* touched bottom her main air lock was a little more than a meter above the surface. Cunningham touched the override, which cut out the safety interlock, and opened both doors at once, taking up his position at the edge of the lock with a remote controller attached to his equipment belt.

The reaction to his arrival was obvious, if somewhat surprising. Wormlike beings practically boiled out of the water, moving away from him. He could not see below the surface anywhere near the sides of the enclosure; but he could guess that the exits were thoroughly jammed, for natives were climbing *over* the wall at every point, apparently frantic to get out. The man had just time to hope that no one was being hurt in the crush, and to wonder whether he should lift off before anything worse happened, when something totally unexpected occurred. Two more of the natives snaked up at his feet, slipped their head ends into the air lock to either side of him, coiled around his legs, and swept him outward.

His reactions were far too slow. He did operate the controller, but only just in time to close the lock behind

him. He and his attackers struck the water with a splash that wet only the outer surface of the portal.

His suit was not ballasted, so it floated quite high in the extremely salt solution. The natives made a futile effort to submerge him, but even their body weights—their density was considerably greater than even the ocean water of their world—did not suffice. They gave up quickly and propelled him along the surface toward the wall.

Well before getting there, the natives found that a human body is very poorly designed for motion through Rantan living areas. The only reason they could move him at all was that he floated so high. His arms and legs, and occasionally his head, kept catching in loops of plant material—loops which to the captors were normal, regular sources of traction. The four digits at the ends of their half-tentacle, half-flipper limbs were opposed in two tonglike pairs, like those of the African chameleon, and thus gripped the stems and branches more surely than a human hand could ever have done. Grips were transferred from one limb to the next with a flowing coordination that caught Cunningham's attention even in his present situation.

The difference between Cunningham's habitual caution and ordinary fear was now obvious. Being dragged to an unknown goal by two beings who far outpowered and outweighed him physically, he could still carry on his earlier speculations about the evolution of Ranta's intelligent species and the factors which had operated to make intelligence a survival factor.

The planet's single moon was much smaller and less massive than Luna, but sufficiently closer to its primary to make up more than the difference as far as tide-raising power was concerned. Ranta's tides were nearly ten times as great as Earth's. There were no really large continents—or rather, as the *Nimepotea*'s mass readers suggested, the continents that covered a large fraction of the planet were mostly submerged—and a remarkably large fraction of the world's area was intertidal zone. Cunningham had named the world from the enormous

total length of shore and beach visible from space—he had still been thinking in Finnish after his months on Omituinen. The tidal areas were largely overgrown with the springy, tangled plants the natives seemed to like so much. This environment, so much of it alternately under and above water, would certainly be one where sensory acuity and rapid nervous response would be survival factors. Selection pressures might have been fiercer even than on Earth; there must have been some reason why intelligence had appeared so early—Boss 6673 was much younger than Sol.

The science of a water-dwelling species would tend to be more slanted in biological than in chemical or physical directions, and perhaps . . .

Opportunity knocked. They had reached a wall, which projected only a few centimeters from the water and was nearly two meters thick. The natives worked their way over it, pulling themselves along by the irregularities as Creak and Nereis had done on land. These two were equally uncomfortable and clumsy, and the man judged that their attention must be as fully preempted by the needs of the moment as were their limbs; only a few of the tonglike nippers were holding him.

He gave a sudden, violent wrench, getting his legs under him and tearing some of the holds loose. Then, as hard as he could, he straightened up. This broke the rest of the holds and lifted him from the wall top. He had had no real opportunity to plan a jump, and he came unpleasantly close to landing back in the water. But by the narrowest of margins he had enough leeway to control a second leap. This put him solidly on the wall more than a meter from the nearer of his captors.

The latter made no serious effort to catch him. They could not duplicate his leaps or even his ordinary walking pace out of water, and neither could get back into the water from where they were for several seconds.

Cunningham, watching alertly to either side for ones who might be in a better position to attack, headed along the wall toward the edge of the city as quickly as he dared. He was free for the moment, but he could see

no obvious way to get back to the *Nimepotea.* The fact that he could swim faster in open water than the natives would hardly suffice; open water did not comprise the whole distance to be crossed. And he would not be safe on the walls, presumably, so his first priority was to reach relatively open country beyond them.

His path was far from straight, since the city compartments varied widely in size, but most of the turns were at right angles. A few hundred meters brought him to the south wall a little to the east of the angle that Creak had used as a checkpoint. The outer slope was gradual, like that of the reservoir dam, but the resemblance was not encouraging; Cunningham convinced himself, however, that it was improbable for his accident of a few hours before to repeat itself so soon, so he made his way down with no difficulty.

The high-tide mark lay fairly near, and much of the rough lava was overlain by fine, black sand. In a sense he was still inside the city, since many structures of cemented stone—some of them quite large—were in sight. A large number of suited natives crawled and climbed among them—climbed, since many of the buildings were enveloped by scaffolding of the same general design as Creak's furniture.

None of the workers seemed to notice the man, and he wondered when some local genius would conceive the idea of spectacles attached over the eyes to replace the lorgnettes used to correct out-of-water refraction. Perhaps with so many limbs, the Rantans were not highly motivated to invent something which would free one more for work. It did not occur to him that lens making was one of the most difficult and expensive processes the Rantans could handle, and one very mobile lens per worker was their best economic solution to the problem.

His own problems were more immediate. He had to find Creak, first of all; everything else, such as persuading people to let him back to his ship, seemed to hinge on that. Unfortunately, he had just been chased away from the place where Creak was supposed to be. Communicating with some other native who might conceivably

be able to find the dam-keeper was going to be complex, since no native but Creak himself and his wife could understand Cunningham—and Cunningham could not properly pronounce Creak's name in the native language. However, there seemed nothing better to do but try—with due precautions against panic and attack reactions.

These seemed to pose little problem on dry land, and the man approached one of the natives who was working alone at the foot of a building some fifty or sixty meters away. It was wearing a breathing suit, of course, and dragging a worksack similar to the one Creak habitually used. Like all the others, it seemed completely unaware of him, and remained so until Cunningham gave a light tug on the cord of its worksack.

It turned its head end toward him, lorgnette in a forward hand, and looked over with apparent calmness; at least, it neither fled nor attacked.

Cunningham spoke loudly, since sound transmission through two suits would be poor, and uttered a few sentences of a human language. He did not expect to be understood, but hoped that the regularity of the sound pattern would be obvious, as it had been so long ago to Creak.

The creature answered audibly, and the man was able to understand fairly well, though there were occasional words he had never heard from Nereis or from Creak. "I'm afraid I can't understand you," the worker said. "I suppose you are the land creature which Creak has been telling about."

This was promising, though the man could not even approximate the sound of a Rantan affirmative, and nodding his head meant nothing to the native. If there was a corresponding gesture used here, he had never been aware of it. All he could do was make an effort at the Rantan pronunciation of Creak's name, and no one was more aware than Cunningham what a dismal failure this was. However, the native was far from stupid.

"Creak tells us he has learned your language, so I suppose you are trying to find him. I'm not sure where he is just now. Usually he's at the reservoir, but some-

times he comes to town. Then you can usually find him explaining to the largest crowd he can gather why we should have more workers out there on dam maintenance, and why the rest of the city should be building shelters below high-water mark against the time the dam finally fails for good. If he's in town now, I hadn't heard about it; but that doesn't prove anything. I've been out here since midday. Is it he that you want?"

Cunningham made another futile effort to transmit an affirmative, and the native once more displayed his brains.

"If you want to say 'Yes,' wave an upper appendage; for 'No,' a lower one—lie down by all means; you may as well be comfortable—and if you don't understand all or some of what I say, wave both upper limbs. Creak said you had learned to understand our talk. All right?"

Cunningham waved an arm.

"Good. Is it really Creak you want to find?"

Arm.

"Is there need for haste?"

Cunningham hesitated, then kicked, startling the native with his ability to stand even briefly on one foot.

"All right. The best thing I can suggest is that you wait here, if you can, until two hours before sunset, when I finish work. Then I'll go into town with you and spread the word that you're looking for him. Probably he'll be preaching, and easy to find."

The man waved both arms.

"Sorry, I shouldn't have put so much together. Did you understand the general plan?"

Arm.

"The time?"

Arm.

"The part about his preaching?"

Both arms; Cunningham had never heard the word the native was using.

"Well, hasn't he ever told you how stupid people were ever to move out of the ocean?"

Kick. This wasn't exactly a falsehood, though Cun-

ningham had grasped Creak's disapproval of the general situation.

"Don't complain. Creak disapproves of cities. That's why he and his wife took that job out in the desert, though how he ties that in with going back to Nature is more than anyone can guess. It's further from the ocean in every sense you can use. I suppose they're just down on everything artificial. I think he gloats every time part of the dam has to be recemented. If that hadn't been happening long before he took the job, people would suspect him of breaking it himself."

Cunningham saw no reason to try to express his relief at this statement. At least, no one would be blaming the alien . . .

He used the don't-understand signal again, and the native quickly narrowed it down to the man's curiosity about why Creak didn't live in the ocean if he so disapproved of cities.

"No one can live in the ocean for long; it's too dangerous. Food is hard to find, there are animals and plants that can kill—a lot of them developed by us long ago for one purpose or another. Producing one usually caused troubles no one foresaw, and they had to make another to offset its effects, and then the new one caused trouble and something had to be done about that. Maybe we'll hit a balance sometime, but since we've moved into land-based cities no one's been trying very hard. Creak could tell you all this more eloquently than I; even he admits we can't go back tomorrow. Now, my friend, it takes a lot of time to converse this way—enjoyable as it is—and I have work to finish. So—"

Cunningham gave the affirmative gesture willingly; he had just acquired a lot to think about. It had never occurred to him that an essentially biological technology, which the Rantans seemed to have developed, could result in industrial pollution as effectively and completely as a chemical-mechanical one. Once the point was made, it was obvious enough.

But this came nowhere near to explaining what had happened so recently, when he had landed at the meet-

ing point. Could Creak be preaching Doomsday to the city's less-balanced citizens? Was the fellow a monomaniac, or a zealot of some sort? This might be, judging from what Hinge (as Cunningham had mentally dubbed his new acquaintance) had been saying. Could the two natives who had attempted to capture him be local police, trying to remove the key figure from a potentially dangerous mob? Cunningham had seen cultures in which this was an everyday occurrence. Hinge seemed a calm and balanced individual—more so than the average member of a pre–space-travel culture who had just met his first off-worlder—but he was only one individual.

And what was Hinge's point about the glue failing? Why should that be a problem? There were all sorts of ways to fasten things together.

Cunningham brooded on these questions while Ranta's white sun moved slowly across the sky, a trifle more slowly than Sol crosses Earth's. He sat facing the city, half expecting Creak to come over the wall toward him at any time. After all, even if the fellow had not been at the landing site it was hard to believe that a weird-looking alien could throw a crowd into panic and then walk out of town, with no effort at concealment, without having everyone in the place knowing what happened and where the alien was within the next hour. However, Creak did not appear.

Two or three other workers who came to discuss something with Hinge noticed the man and satisfied an apparently human curiosity by talking to him rather as Hinge had done. None of them seemed surprised to see him, and he finally realized that Creak had made his presence known, directly or otherwise, to the city's entire population. That made the Rantans seem rather less human. Granting the difficulty of a trip to the dam, most intelligent species which Cunningham had met would have had crowds coming to see an alien, regardless of their ideas about his origin. Maybe Creak had a good reason for trying to poke his fellow citizens into action; they *did* seem a rather casual and unenterprising lot.

They knew no astronomy; they had an empirical familiarity with the motions of their sun and moon, but had barely noticed the stars and were quite unaware of Boss 6673's other planets. They knew so little of the land areas of their own world that they took it for granted that Cunningham was from one of these—at least, Hinge had referred to him as "the land creature."

Where on Ranta was Creak? There were questions to be answered!

Eventually, Hinge replaced his tools in the worksack and began to drag the latter toward the city wall. Cunningham helped. There was a ramp some three hundred meters east of the point where he had descended, and the native used this. Hinge let the man do most of the work with the bag, making his own painful way up the slope with the rope slack. At the top, he spoke again.

"I really must eat. It will probably be quickest if you wait here. I will spread the word on my way home that you seek Creak. If he has not found you by the time I get back, I will guide you to the various places he is most likely to be. I should be back in half an hour, or a little more."

He waited for Cunningham to express comprehension, then dropped his worksack into the water, followed it, and disappeared into the tangle.

3

Evidently Hinge kept his promise about spreading the word. During the next quarter-hour, more and more native heads appeared above the water, and more and more lorgnettes were turned on the visitor. Human beings are not the only species rendered uneasy by the prolonged, silent stare; but they rank high. Before long, Cunningham was wondering whether the old idea of being frozen by a stare through a lorgnette might not have something more than an artificial social connotation.

Several more workers came up the ramp, looked him over, and then splashed on into the city—whether to

form part of the growing crowd or to go home to dinner was anybody's guess.

Cunningham kicked uneasily at the material underfoot, then stopped guiltily as he remembered what had happened earlier; but he looked closely and decided that the cement was in good condition here. Perhaps the Rantans paid more attention to upkeep on items which were nearby and in plain sight; after all, they had plenty of other human characteristics.

Presumably the crowd was not really silent, but none of its sound was reaching Cunningham's ears. This contributed to the oppressive atmosphere, which he felt more and more strongly as the minutes fled by. Hoping to hear better and perhaps get the actual feelings of the crowd, he seated himself on the inner edge of the wall and let his legs dangle in the water. He heard, but only a hopeless jumble of sound. No words could be distinguished, and he did not know the Rantans well enough to interpret general tones.

And now the crowd was moving closer. Was it because more people were crowding into the space, or for some other reason? He looked wistfully at his ship, towering above the walls only a few hundred meters away. Would it pay to make a dash for it? Almost certainly not. He could get to the right space along the wall, but that swim through the tangle would be a waste of time if even a single native chose to interfere, He got uneasily to his feet.

The heads were closer. Were they *coming* closer, or were more appearing inside the circle of early arrivals? A few minutes' watch showed that it was the latter, and that eased his mind somewhat. Evidently the crowd was not deliberately closing on him, but it was growing in size, so the word of his presence must be spreading. When would it reach the beings who had tried to capture him earlier? What would their reaction be when it did?

He was in no real immediate danger, of course. With any warning at all, he could spring back down the wall and be out of reach, but this would bring him no nearer

to his ship in any sense. He wished Hinge or Creak would show up . . . or that someone would simply talk to him.

A head emerged a couple of meters to his left, against the wall; its owner, wearing a breathing suit, slowly snaked his way out of the water.

Cunningham stood tense for a moment. Then he relaxed, realizing that the newcomer could pose no threat at that distance. But he tightened up again and began looking at the water closely as it occurred to him that the being might be trying to distract his attention.

The native carefully dragged himself onto the wall so that no part of his length remained in the water. This seemed more effort than it was worth, since a typical Rantan weighs around four hundred fifty kilograms in air even on his own planet, and Cunningham was more suspicious than ever. He was almost sure that the fellow was bidding strictly for attention when he heard its voice.

"Cun'm! Listen carefully! Things have gone very badly. I don't think anyone in the water can hear me right now, but they'll get suspicious in a moment. It's very important that you stay away from your ship for a time, and we should both get away from here. As soon as I'm sure you understand, I'm going to roll down the wall; you follow as quickly as you can. Some may come after us, since there are a few other breathing suits on hand, so I'll roll as far as I can. I have some rope with me, and as soon as we get together you can use it to help me travel. That way we can go faster than they, and maybe they'll give up."

By now, Cunningham had recognized Creak's body pattern.

"Why should they want to catch us?" he asked.

"I'll explain when we have time. Do you understand the plan?"

"Yes."

"All right, here I go. *Come on!*"

Creak poured his front end onto the slope and followed it with the rest of his body, curling into a flat spi-

ral with his head in the center as he did so. His limbs were tucked against his sides, and his rubbery body offered no projections to be injured. He had given himself a downhill shove in the process of curling up, and the meter-wide disk which was his body went bounding down the irregular outer surface of the wall. Cunningham winced in sympathy with every bounce as he watched, though he knew the boneless, gristly tissue of the Rantans was not likely to be damaged by such treatment. Then, splashes behind him suggested that Creak probably had good reason for the haste he was so strongly recommending.

The man followed him, leaping as carefully as he could from rock to rock, tense with the fear that one of them would come loose as he landed on it. He reached the bottom safely, however, and sprinted after Creak, whose momentum combined with the southward slope of the rocky beach to carry him some distance from the wall.

Finally, he bumped into the springy scaffolding surrounding one of the numerous buildings that dotted the area, and was brought to a halt. He promptly unrolled, and shook out the rope which he had been carrying in some obscure fashion. It was already tied into a sort of harness which he fitted over his forward end. As Cunningham came up, the native extended a long bight to him.

The man had no trouble slipping this over his head and settling it in place around his waist. He looked back as he was finishing and saw that half a dozen suited natives had emulated Creak's method of descending the wall. They had, however, unrolled as soon as they reached the bottom, probably to see which way the fugitives were going; and they were well behind in the race. The nearest were just starting to crawl toward them in typical Rantan dry-land fashion, pulling themselves along by whatever bits of lava they could find projecting through the sand.

"East or west? Or does it matter?" Cunningham asked.

"Not to me," was the response, "but let's get moving!"

Cunningham took a quick look around, saw something from his erect vantage point which amused him, leaned into the bight of the rope harness, and headed east. Creak helped as much as he could, but this was not very much. The native could not conveniently look back, since the harness prevented his front end from turning and none of his eyes projected far enough. The man could, and did.

"Only a couple are actually following," he reported. "You're pretty heavy, and I'm not dragging you really very much faster than they can travel; but I guess the fact that we're going faster at all, and that I am evidently a land creature, has discouraged most of them."

"There are some who won't give up easily. Don't stop just yet."

"I won't. We haven't reached the place I have in mind."

"What place is that? How do you know anything about this area? Personally, I don't think we should stop for at least a couple of your kilometers."

"I can see a place where I think we'll be safe even if they keep after us. You can decide, when we get there. I'll go on if you think we have to. But remember, you weigh half a dozen times as much as I do. This is work."

One by one their pursuers gave up and turned back, and at about the time the last one did so Cunningham felt the load he was pulling ease considerably. At the same moment Creak called out, "I'm sorry, Cun'm. I can't help you at all here. It's all sand, and there's nothing to hold on to."

"I know," the man replied. "That was what I thought I'd seen. It's easier to pull you in deep sand, and I didn't think anyone could follow us here." He dragged the native on for another hundred meters or so, then dropped the rope and turned to him.

"All right, Creak, what is this all about?"

The native lifted the front third of his body, and

looked around as well as the height and his lens would permit before answering.

"I'll have to give you a lot of background, first. I dodged a lot of your questions earlier because I wasn't sure of your attitude. Now I'm pretty sure, from some of the things you've said, that you will agree with me and help me.

"First, as you seem to take for granted, we used to be dwellers in the tidal jungles—many lifetimes ago. Our ancestors must have been hunters like the other creatures that live there, though they ate some plant food as well as animals. Eventually they learned to raise both kinds of food instead of hunting for it, and still later learned so much about the rules which control the forms of living things that they could make new plants and animals to suit their needs. This knowledge also enabled them to make buildings out of stone and wood, once cement was developed; and they could live in shelters and provide themselves with necessities and pleasures, without ever risking their lives or comfort in the jungles. We became, as you have called it, civilized and scientific.

"That so-called 'progress' separated most of us from the realities of life. We ate when we were hungry, slept in safety when we were tired, and did whatever amused us the rest of the time—developing new plants and animals just for their appearance or taste, for example. The tides, which *I* think were the real cause of our developing the brains we did, became a nuisance, so we built homes and finally cities out of the water."

"And you think that's bad?"

"Of course. We are dependent on the city and what it supplies, now. We are soft. Not one in a hundred of us could live a day in the tidal jungles—they wouldn't know what was fit to eat, or what was dangerous, or what to do when the tide went out. Even if they learned those things quickly enough to keep themselves alive, they'd die out because they couldn't protect eggs and children long enough. I've been pointing all this out to them for years."

"But how does this lead to the present trouble? Did

you really wreck the dam yourself, to force people out of the city?"

"Oh, no. I'm enthusiastic but not crazy. Anyway, there was no need. Civilization out of water, like civilization in it, depends on construction, and construction depends on cement. It was—I suppose it was, anyway—the invention of cement which made cities possible; and now that the cement is starting to fail, the warning is clear. We should—we *must*—start working our way back to the sea—back to Nature. We were designed to live in the sea, and it's foolish to go against basic design. We should no more be living on land than you should be living in the water."

"Some of my people do live in underwater cities," Cunningham pointed out. "Some live on worlds with no air, or even where the temperature would freeze air."

"But they're just workers, doing jobs which can't be done elsewhere. You told me that your people work only a certain number of years, and then retire and do what they please. You're certainly back to Nature."

"In some ways, I suppose so. But get back to the reason we're sitting on the sand out of reach of my ship."

"Most of the people in the city can't face facts. They plan to send a big party of workers to repair the dam, and go on just as we have been for years, of course setting up a strict water-use control until the reservoir fills again. But they plan to go on as though nothing serious had happened, or that nothing more serious could ever happen. They're insane. They just don't want to give up what they think of as the right to do what they want whenever they want."

"And you've been telling them all this."

"For years."

"And they refuse to listen."

"Yes."

"All right, I see why *you* are here. But what do they have against me? Or were they merely trying to get me away from your influence?"

If Creak saw any irony in the question he ignored it. "I've been telling them about you from the first, of

course. I don't understand this bit about worlds in the sky, and most of them don't either, but there's nothing surprising about creatures living on land even if we've never seen any before. I told them about your flying machine, and the things you must know of science that we don't, and the way that you and your people have gone back to Nature just as I keep saying we must. You remember—you told me how your people had learned things which separated them from the proper life that fitted them, and which did a lot of damage to the Nature of your world, and how you finally had to change policies in order to stay alive."

"So I did, come to think of it. But you've done a certain amount of reading between the lines. You really think I'm living closer to Nature than my ancestors of a thousand years ago?" Cunningham was more amused then indignant, or even worried.

"Aren't you?"

"I hate to disillusion you, but— Well, you're not entirely wrong, but things aren't as simple as you seem to think. I could survive for a while on my own world away from my technological culture, and most of my people could do the same, because that's part of our education these days. However, we got back to that state very gradually. As it happened, my people *did* become completely dependent on the physical sciences to keep them protected and fed, just as you seem to have done with the biological ones. We did such a good job that our population rose far beyond the numbers which could be supported without the technology.

"The real crisis came because we used certain sources of energy much faster than they were formed in Nature, and just barely managed to convert to adequate ones in time. We're being natural in one way: we now make a strong point of not using any resource faster than Nature can renew it. However, we still live a very civilized-scientific life, the sort that lets us spend practically all our time doing what we feel like rather than grubbing for life's necessities. You're going to have to face the fact that the technology road is a one-way one, and

cursing the ancestors who turned onto it is a waste of time. You'll just have to take the long way around before you get anywhere near where you started."

"I . . . I suppose I was wrong, at least in some details." The native seemed more uneasy than the circumstances called for, and Cunningham remembered the need-to-be-right which he had suspected of being unusually strong in the species. Creak went on, "Still, using you as an example was reasonable. Your flying machine proves you know a lot more than we do."

Cunningham refrained from pointing out the gap in this bit of logic, since at least it had led back to the point he wanted pursued.

"That machine *is* something I'd like to get back to," he remarked. "If you really don't want to explain why someone tried to capture me, I can stand it. But how do I get back there?"

"I wasn't trying to avoid explaining anything," Creak responded, rather indignantly. "I don't know why anyone tried to capture you, but maybe they thought I wasn't telling the exact truth about the situation and they wanted to question you without my intervention. I suppose they'd have been willing to take the time to learn your language—it's the sort of intellectual exercise a lot of them would like. But how you can get back there will take some thinking. I think I can work it out somehow—I'm sure I can. How long can you stay away from your machine without danger? I've never known you to spend more than two days—"

"I'm set to be comfortable for three days, and could get along for five or six; but I hope you don't take that long. What do I do, just sit out here on the sand while your brain works?"

"Can't you learn things outside the city? I thought that was what you were here for. However, there is one other thing you could do, if you were willing—and if it is possible. I know you are a land creature, but am not sure of your limits."

"What is that?"

"Well . . . it's Nereis. I can tell myself she's all

right, and that nothing can reasonably go wrong, but I can't help thinking of things that might. How long would it take you to get to our house, without your ship? Or can you travel that far at all?"

"Sure. Even going around the city, that's less than twenty kilos each way, and there's nothing around to eat me. You really want me to go?"

"It's a little embarrassing to ask, but—yes, I do."

Cunningham shrugged. "It will be quite a while before I have to worry, myself, and you seem pretty sure of being able to solve the ship problem all right. I suppose, the sooner the better?"

"Well, I can't help but picture the house wall going out like the dam."

"I see. Okay, I'm on my way. Put your brain to work."

4

Laird Cunningham was an unsuspicious character by nature. He tended to take the word of others at face value, until strong evidence forced him to do otherwise. Even when minor inconsistencies showed up, he tended to blame them on his own failure to grasp a pertinent point. Hence, he started on his walk with only the obvious worry about recovering his ship occupying his mind—and even that was largely buried, since his conscious attention was devoted to observing the planetary features around him.

He had left Creak at a point which would have been slightly inside the city if the latter had been a perfect square. The easiest way to go seemed to be east until he reached the southern end of the east wall, north along the latter, and then roughly parallel with the aqueduct until he reached the north end of the latter. Crossing it, or the dam, might be a little risky, but the reservoir should be nearly empty by now. Unless he had to stay with Nereis for some reason, it should be possible to get back in, say, five or six hours. He should have mentioned that to Creak— But, no, the sun was almost

down now; most of the journey would be in the dark. Why hadn't he remembered that?

And why hadn't Creak thought of this?

Cunningham stopped in his tracks. A Rantan breathing suit was not particularly time-limited—it merely kept the air intakes at the bases of the tentacles wet, and in theory several days' worth of water could be carried. Still, why hadn't Creak been worried for his own sake about the probable time of the man's return? He was trapped on a surface where he was almost helpless. Had he simply forgotten that aspect, through worry for his wife and incipient family? It was possible, of course.

Cunningham, almost at the corner that would take him out of sight of Creak, paused and looked back. He could just see the native, but nearly a kilometer of distance hid the details. He drew a small monocular from his belt and used it.

The sight was interesting, he had to admit. Creak had stretched his body on the sand, holding a slight curve like a bent bow. His limbs were pulled tightly against his sides. Evidently he was exerting a downward force at the ends of the arc, for he was *rolling* in the direction of the convexity of the curve—rolling less rapidly than Cunningham could walk, but much faster than the man had ever seen a Rantan travel on dry land.

As he watched, Creak reached the end of the deep sand and reverted to more normal travel, pulling himself along the projecting stones. Creak never looked back at Cunningham; at least, his lorgnette was never called into use. Probably it never occurred to him that the human being's erect structure would give him such a wide circle of vision . . .

Cunningham was grinning widely as pieces of the jigsaw began to fall rapidly into place. After a few moments' thought, he replaced the monocular at his belt and resumed his northward hike. Several times he stopped to examine closely the wall of the city, as well as those of some of the small buildings outside. In every case the cement seemed sound. Further north, more than an hour later, he repeated the examination at the

walls of the aqueduct, and nodded as though finding just what he had expected.

It was dark when he reached the dam, but the moon provided enough light for travel. He did not want to climb it, but there was no other way to get to the house. He used his small belt light and was extremely careful of his footing, but he was not at all happy until he reached the top. At that point, he could see that the reservoir was nearly empty. This eased his mind somewhat; there would be no water pressure on the structure, and its slopes on either side were gentle enough so that it should be fairly stable even with the cement's failure.

Nereis' house was still apparently intact, but this did not surprise him. Moonlight reflecting from the surface also indicated that its water level had not changed significantly.

He made his way along the walls to the living room as quickly as possible, found the corner where space had been made for him in the furniture, and dropped in. He then remembered that he had not ballasted himself, but managed to roll face down and call to Nereis.

"It's Cunningham, Nereis. I need to talk to you. Is everything all right here?"

The room was practically dark, the only artificial lighting used by the Rantans being a feeble bioluminescence from some of the plants; but he could see her silhouette against these as she entered the room and made her way toward him.

"Cun'm! I did not expect to see you so soon. Has something happened? Is Creak hurt? What is being done about the dam?"

"He's not hurt, though he may be in some trouble. He and I had to get away from the city for a while. He was more worried about you than about us, though; he asked me to come to make sure you were safe while he stayed to solve the other problems. I see your walls aren't leaking, so I suppose—"

"Oh, no, the walls are sound. I suppose the water is evaporating, but it will be quite a few days before I have to worry about producing crystals instead of eggs."

"And you're not worried about the walls failing, even after what happened to the dam today? You're a long, long way from help, and you couldn't travel very well, even in a breathing suit, in your condition."

"The house will last. That dam was different—"

She broke off suddenly. Cunningham grinned invisibly in the darkness.

"Of course, you knew it too," he said. "I should have known when Creak didn't arrange to have me fly you to the city."

Nereis remained silent, but curled up a little more tightly, drawing back into the furniture. The man went on after a moment.

"You knew that the glue lasts indefinitely as long as it's in some sort of contact with saltwater. All your buildings have saltwater inside, and apparently that's enough even for the glue on the outside—I suppose ions diffuse through or something like that. But you have just two structures with only freshwater in contact with them—the dam and the aqueduct. How long have you known that the glue doesn't hold up indefinitely in freshwater?"

"Oh, everyone has known that for years." She seemed willing enough to talk if specific plots were not the subject. "Two or three years, anyway. Cities have been dying for as long as there have been cities, and maybe some people sometimes found out why, but it was only a few years ago that some refugees from one of them got to ours and told what had happened to their reservoir. It didn't take the scientists long to find out why, after that. That's when Creak got his job renewing the cement on the dam. He kept saying there's much more needed—more people to do the cementing, and more reservoirs, if we *must* stay out of the ocean. But no one has taken him seriously."

"You and he think people should go back to the ocean—or at least build your cities there. Why don't others agree?"

"Oh, there are all sorts of things to keep us from living there. The water is hardly breathable. All sorts of

living things that people made and turned loose when they didn't want them anymore—"

"I get it. What my people call 'industrial pollution.' Hinge was right. I suppose he wasn't in on this stunt of Creak's— No, never mind, I don't know his real name and can't explain to you. Why haven't you tried to produce a glue that could stand freshwater?"

"How could we? No living thing, natural or artificial, has ever been able to do without food."

"Oooohhh! You mean the stuff is *alive!*"

"Certainly. I know you have shown us that you can change one substance into another all by yourself when you were doing what you called chemical testing, but we have never learned to do that. We can make things only with life."

Cunningham thought briefly. This added details to the picture, but did not, as far as he could see, alter the basic pattern. "All right," he said at last. "I think I know enough to act sensibly. I still don't see quite all of what you and Creak were trying to do, but it doesn't matter much. If you're sure you will be all right and can hold out here another few days, I'll get back to where I left Creak."

He started to swim slowly toward the wall.

"But it's night!" Nereis exclaimed. "How can you walk back in the dark? I know you're a land creature, but even you can't see very well when the sun is down. You'll have to wait here until morning."

Cunningham stopped swimming and thought for a moment.

"There's a moon," he pointed out, "and I guess I never showed you my light, at that. I'll be— *How did you know I was walking?*"

Silence.

"Are you in some sort of communication with Creak that you have never told me about?"

"No."

"And I know you didn't see me coming, and I didn't say anything about leaving the ship in the city or how I traveled. So Creak had set something up before we left

here, and you knew about it. He was not really anxious about you—he knew you were perfectly safe. So part of the idea was to keep me away from my ship, or at least the city for some time. I can't guess why. That much of the plan has succeeded. Right?"

Still no word came from the woman.

"Well, I'm not holding it against you. You were trying for something you consider important, and you certainly haven't hurt me so far. Right now, in fact, it's fun. I don't blame you for trying. Please tell me one thing, though: Are you and Creak trying to force your people to move back to the ocean, in spite of knowing about the pollution which right now makes that impossible? Or do you have something more realistic in mind? If you can bring yourself to tell me, it may make a difference in what I can do for all of you."

"It was the second." Nereis took no time at all to make up her mind. "Mostly, it was to make people realize that they were just lying on their bellies doing nothing. We wanted them to see what could be done by—I can't say this just right—by someone who wasn't really any smarter than we are, but had the urge to act. We wanted them to see your flying machine to show them the possibilities, and we wanted to get it away from you to . . . well—"

"To show them that I'm not really any smarter than you are?"

"Well . . . Yes, that about says it. We hope people will be pushed into trying—as they did when they built the land cities so long ago. Saying it that way now makes it all seem unnecessarily complex, and silly, but it seemed worth trying. *Anything* seemed worth trying."

"Don't belittle yourselves or your idea. It may just work. In any case, I'd have had to do something, myself, before leaving to prove that I wasn't really superior to your people— Never mind why; it's one of the rules." He floated silently for a minute or two, then went on.

"I agree that your people probably need that kick—excuse me, push—that you suggest. I'm afraid it will be a long time before you really get back to Nature, but

you should at least keep moving. No race I know of ever got back there until its mastery of science was so complete that no one really *had* to work anymore at the necessities of life. You have a long, long way to go, but I'll be glad to help with the push . . .

"Look, I have to go back to the ship. I'm betting Creak won't expect me back tonight, and the guarding won't be too much of a problem—you folks sleep at night, too. I have to get something from the ship, which I should have been carrying all along—you're not the only ones who get too casual. Then I'll come back here, and if you're willing to sacrifice your furniture to the cause, I'll make something that will do what you and Creak want. I guarantee it."

"Why do you have to get something from your ship in order to make something from my furniture? I have all the glue you could possibly need."

"That's the last thing I want. You depend too much on the stuff, and it's caused your collective craftsmanship to die in the—the egg. Glue would make what I want to do a lot easier, but I'm not going to use it. You'll see why in a few days, when I get the job done."

"A few days? If the weather stays dry, I may lose enough water from the house to make it too salt for me and—"

"Don't worry. I'll take care of that problem too. See you later."

5

The moon had passed culmination when Cunningham reached the place where Creak had rolled down the wall a few hours before, and he was relieved to see the bulk of his ship gleaming in the moonlight a few hundred meters away. To avoid tripping or slipping, he went slowly on all fours along the walls until he reached a point closest to the vessel, but on the side opposite the air lock. Then he unclipped the remote controller from his belt and opened the lock, regretting that he could not bring the ship to him with the device.

He listened for several minutes, but there was no evidence that the opening had attracted any attention. Of course, that was not conclusive . . .

Very, very gently he let himself into the water. Still no response. He could feel the plants a few centimeters down, and rather than trying to swim he grasped the twining growths and pulled himself along, Rantan fashion, slowly enough not to raise ripples.

The plants extended only twenty meters or so from the wall. He had to swim the rest of the way, expecting at every moment to feel a snaky body coil around him; he was almost surprised when he reached the hull. He had no intention of swimming around to the lock; there were handholds on every square meter of the vessel's exterior. He found one, knew immediately where all the neighboring ones must be, reached for and found another, and hoisted himself gently out of the water. Still as quietly as possible he climbed over the top and started down toward the open lock. Now he could see the moon reflected in the water.

He stopped as he saw the silhouette of a Rantan head projecting from the lock. The opening must have been seen or heard after all, for the creature could not have been inside before. Was it alone? Or were there others waiting inside the lock or in the water below? Those in the water would be no problem, but he would have to take his chances if any were in the ship.

Cunningham thought out his movements for the next few minutes very carefully. Then he let himself down to a point just above the lock, three meters above the native. Securing a grip on the lowest hold he could reach, he swung himself down and inboard.

He had no way of telling whether he would land on a section of Rantan or not; he had to budget for the possibility. One foot did hit something rubbery, but the man kept his balance and made a leap for the inner door, which he had opened with the controller simultaneously with his swing. There had been only one guard in the lock, and lying on a smooth metal surface he had had no

chance at all to act; he had been expecting to deal with the man climbing from below.

Cunningham relaxed for a few minutes, ate, and then looked over his supply of hand equipment. He selected a double-edged knife, thirty-five centimeters in blade length, cored with vanadium steel and faced with carbide. Adding a sheath and a diamond sharpener, he clipped the lot to his belt, reflecting that the assemblage could probably be called one tool without straining the term.

Then he stepped to the control console and turned on the external viewers, tuning far enough into the infrared to spot Rantan body heat but not, he hoped, far enough to be blocked entirely by water. Several dozen of the natives surrounded the ship, so he decided not to try swimming back out. The guard had apparently joined those in the water.

"I might get away with it, but it would be rubbing things in," he muttered. Gently he lifted the vessel and set it down again just outside the south wall of the city. Extending the ladder from the lock, he descended, closed up with the controller, and started his long walk back to the reservoir.

Creak, from the top of the wall, watched him out of sight and wondered where his plan had gone wrong and what he could do next. He also worried a little: Cunningham had been meant to tell him that Nereis was all right, but had not seen him to deliver the message.

6

Four Rantan days later, principles shelved for the moment in his anxiety for his wife, Creak accompanied the repair party toward the dam.

It had taken a long time to set up: the logistics of a fifteen-kilometer cross-country trip were formidable, and finding workers willing to go was worse. Glue, food, spare breathing suits and their supporting gear, arrangement for reserves and reliefs—all took time. It was a little like combing a city full of twentieth-century white-

collar workers to find people who were willing to take on a job of undersea or space construction.

It might have taken even longer, but the water in the city was beginning to taste obnoxious.

A kilometer north of the wall they met something that startled Creak more than his first sight of Cunningham and the *Nimepotea* six months before. He could not even think of words to describe it, though he had managed all right with man and spaceship.

The thing consisted of a cylindrical framework, axis horizontal, made of strips of wood. Creak did not recognize the pieces of his own furniture. The cylinder contained something like an oversized worksack, made of the usual transparent fabric, which in turn contained his wife, obviously well and happy.

At the rear of the framework, on the underside, was a heavy transverse wooden rod, and at the ends of this were— Creak had no word for "wheels." Under the front was a single, similar disk-shaped thing, connected to the frame by an even more indescribable object which seemed to have been shaped somehow from a single large piece of wood.

The human being was pulling the whole arrangement without apparent effort, steering it among the rocks by altering the axial orientation of the forward disk.

The Rantans were speechless—but not one of them had the slightest difficulty in seeing how the thing worked.

"Principles are an awful nuisance, Creak," the man remarked. "I swore I wasn't going to use a drop of your glue in making the wagon. Every bit of frame is *tied* together—I should think that people with your evolutionary background would at least have invented knots; or did they go out of style when glue came in? Anyway, the frame wasn't so bad, but the wheels were hell. If I'd given up and used the glue, they'd have been simple enough, and I'd have made four of them, and had less trouble with that front fork mount—though I suppose steering would have been harder then. Making bundles for the rims was easy enough, but attaching spokes and

making them stay was more than I'd bargained for."

"Why didn't you use the glue?" Creak asked. He was slowly regaining his emotional equilibrium.

"Same reason I left the ship down by the city, and lived on emergency food. Principle. *Your* principle. I wanted you and your people to be really sure that what I did was nice and simple and didn't call for any arcane knowledge or fancy tools. Did you ever go through the stone-knife stage?" He displayed the blade. "Well, there's a time for everything, even if the times are sometimes a little out of order. You just have to learn how to *shape* material instead of just sticking it together. Get it?"

"Well . . . I think so."

"Good. And I saved my own self-respect as well as yours, I think, so everyone should be happy. Now you get to work and make some more of these wagons—only for Heaven's sake do use glue to speed things up. And let three-quarters of this crowd go back to painting pictures or whatever they were doing, and then cart some stuff up to that dam and get it fixed. It might rain sometime, you know."

Creak looked at his wife—she was riding with one end out of the wagon, so she could hear him. "I'm afraid we're further than ever from Nature," he remarked.

She made a gesture which Cunningham knew to mean reluctant agreement.

"I'm afraid that's right," the man admitted. "Once you tip the balance, you never get quite back on dead center. You started a scientific culture, just as my people did. You got overdependent on your glue, just as we did on heat engines—I'll explain what those are, if you like, later. I don't see how that information can corrupt *this* planet.

"You still want to get back to your tidal jungles, I suppose. Maybe you will. We got back to our forests, but they are strictly for recreation now. We don't have to find our food in them, and we don't have much risk of getting eaten in them. So someday you may decide that's best. In any case, it will take you a long, long time

to get around that circle; and you'll learn a lot of things on the way; and believe it or not, the trip will be fun.

"Forgive the philosophy, please. As I remarked to you a few days ago, when your ancestors started scientific thinking they turned you onto a one-way road. And speaking of roads, which is a word you don't know yet —you'd better make one up to the dam. These rocks I've been steering the wagon around are even worse than principles." ☆

Songs of Dying Swans

Jack C. Haldeman II

It was a time of peace. Music and the laughter of small children filled the air of a thousand colonized planets. It was a time of tranquility, a pause for breath after the frantic race to the stars. It was a small footnote in the pages of time.

On the planet K'tar, which circled patiently around the star known locally as Brit but called the sun by all who shared its light, was an elderly shopkeeper named Barth Jon-Smit. He was assisted in his duties by a young man who chose, in the fashion of the younger generation, to drop his surnames and be called simply Ross. They bought and sold music at a time when it was in vogue and thereby attained a modest return—sufficient for the shopkeeper, yet not enough in the eyes of the ambitious Ross.

Although it was not yet time for mid-meal, the shop had been open for hours. As usual, it was Barth who opened it and invoiced the orders that came in during the night. It would be quite some time before Ross showed up, if indeed he came in at all. This was of little concern to the old man, as he was quite capable of maintaining the shop by himself. It saddened him somewhat to see how lightly the young people took their responsibilities, yet he had grown philosophical in his advancing years and realized that the flush of youth was a

passing thing, something to be enjoyed at the time and remembered in the waning years.

The printout of orders on his desk was long: business had been very good the last few years. People had so much leisure time that they naturally turned to music, turned to introspection. Barth enjoyed just being a part of this; the money was secondary. So much potential happiness passed through his shop to the far-flung worlds by the small transmitter in the back room. Today was not like the days of his father's father—then people were always rushing, always busy, with no time for the enjoyment of the fruits of their labor.

His was a specialty business, dealing only with items in small supply and high demand. Items that, due to their very nature, were not suitable for mass distribution or manufacture. Therefore, he dealt mostly with individuals, taking their orders directly and shipping from his shop into their homes or places of business. Except for those living on the most primitive of the settled planets, almost everybody had a transmitter, or at the very least a receiving unit, in his home. Even the primitive worlds had a unit in each village.

The music he shipped out consisted of a variety of formats. From the planet Zor he received ornate glass jars filled with several levels of unmixing colored oils which reacted to the presence of human life by giving off harmonious vibrations. From Baldor, the singing flowers; from Energumen, the sturdy tree of songs; from Freuchen, the tinkling ice structures. And so it went—a thousand artifacts from a thousand worlds, all bringing music to the ears of mankind.

But most of all it was the crystals from Balzar. Of all the music, theirs was unquestionably the most soothing. Sitting on their small, ornately sculptured bases, the crystals emitted a lightly ringing music of unrepeating patterns. The beautiful sounds ran up and down the scales; crystal harmonics slipped above and below the normal range of hearing, and these too were soothing. They seemed almost hypnotic, certainly peaceful. The

demand was high for the crystals and Barth had a standing order for all that were produced on Balzar.

Barth Jon-Smit was finishing the morning shipments when Ross finally came in. The young assistant was dressed in the brightly affected fashion of the current generation. His head was shaved and tinted a dull blue. Gaudy earrings swung from the side of his head. All this Barth took in stride. He had seen fashions come and go on a dozen worlds in his years. Perhaps the boy would yet learn enough to take over the shop when it was time.

"Good times," the boy greeted as he sat on the edge of the desk.

"Times," nodded the man. "Times."

"How were the night orders? Are we rich, old man?"

"Times are good." Barth smiled. "But not *that* good."

"Then we should make them better, old man. Raise our prices or something."

"We make a comfortable profit."

"The Balzar crystals are underpriced. We could make a fortune on them alone. Everybody wants them."

"I have talked many times with the people of Balzar. They are satisfied with the present arrangements. I would not wish to jeopardize their planet's sole export for a little profit."

"What do you care about those filthy creatures? Call them people, hah! You insult us all."

"They were men once, like you and me. Never forget that. It was an experiment in genetic manipulation that went wrong. You cannot blame them for that."

"I don't *blame* them for anything. I simply can't stand the beasts, and fail to understand why you should let any feelings toward them get in the way of our making money. They don't look like men, they don't even walk like men."

"Have you ever met one, or talked to one of them?" Barth asked.

"Of course not. They can't even leave their planet. They're disgusting! All they ever do is crawl around in the mud and muck of Balzar."

"They are not intolerable people," said the old man

sadly. "And they do make beautiful music. Music that carries the melancholy of their situation and their yearning for better days. We could not ask more of them; they have suffered so much."

"You will not convince me, old man. Mudcrawlers they are and always will be."

Ross slid off the desk and started to pace around the room.

"There is nearly an hour before mid-meal. What do you want me to do?"

"The morning shipments are all out. Perhaps you could work on the inventory today."

"I did that last week," Ross complained.

"It is far from finished and is a necessary job. We would not like to get orders we could not fill. We would lose money that way."

Ross nodded, and walked to the soundproof door leading to the storage room. He paused to take a pair of headphones off the hook next to the door. The headphones blocked off most of the music inside the room by generating white noise. Without them, the barrage of sound would have been intolerable.

The room was huge, larger in fact than the main part of the shop. Ross started taking the inventory at the far end, jotting notes on a small pad. The room was filled nearly to overflowing, making Ross feel constantly cramped. He preferred not to spend any more time than necessary inside.

He had finished counting ice structures and was closing the freezer, when he saw that one of the doors to an unused storage vault was open. Absently, he started to close the door, and at the last minute looked inside.

Compartmented inside the vault were Balzar crystals. Thousands of them! This was not the normal stock, these were extras—and worth a fortune. Ross had never seen so many. He slowly closed the door and finished the inventory as thoughts of easy money filled his head.

Barth was taking his mid-meal at his desk as usual when Ross returned. He set the inventory pad on the desk next to the old man.

"Finished," said Ross. "I go to take my mid-meal with companions. Good times."

Barth Jon-Smit nodded, realizing that the odds on Ross returning later in the day were slight.

The young man strolled out the door and down the narrow, winding street. Shortly, he came to a tavern, which he entered.

Inside, the small building was finished to old-fashioned tastes: strobe lights flashed against a swirling background of shifting colors while loud, if tasteless, music came from simple unidimensional speakers. Ross and his friends often met there, their modern garb making them stand out even more than usual.

His friends were in their regular booth.

"Good times," he said, approaching them.

They slapped the tops of their polished heads in a mock salute of greeting. Ross returned the gesture and sat down.

"How was the day at the sweatshop?" asked the girl called Krin, her head shining in the flashing lights.

Ross shrugged. "I put in my token appearance."

"Why?" asked Lon, a fat boy across the table.

Ross looked at him quizzically.

"I mean, why do you bother at all?"

Ross caught the waiter's attention, raised one finger, pointed at the drink in front of Krin and then to himself. The waiter nodded and Ross turned back to Lon across the table.

"Because there's money to be made in music."

"What do you need money for? 'On the dole from womb to doom.' " Lon laughed easily, and the others joined in.

"I mean big money," said Ross. "Money to do things with. Maybe even enough to get away from this stinking planet."

Laughter again went around the table.

Krin reached up and patted the top of Ross' head. "Been out in the sun too long," she said.

His drink came and Ross slumped back into his chair, suddenly very serious.

"What do you know about the inhabitants of Balzar?" Ross asked, slowly sipping his drink.

"Worms." Lon spat. "Slimy worms."

There were nods and general murmurs of agreement around the table. If the people of Balzar had any friends, none were sitting around Ross.

"Their music is nice, though," said Krin, offering the nearest thing to a compliment.

"And very expensive," Ross said.

"What of it?"

"The old man has a lot of crystals."

"Of course he does," said the girl. "He sells the stuff."

"No, I mean he has a *lot* of them—more than he could sell in five years."

"So what? What good does that do us?"

"It seems to me that there's money to be made here, if we could only figure out a way."

"You all can figure it out," Lon said, pushing back his chair and rising. "I've got to get to my rehabilitation lecture. Good times."

"Don't let them talk you into a job," said Ross.

"Don't worry about that! Meet tonight?"

"Yeah. My place," said Ross.

"Times."

The group broke up, and Ross, having nothing better to do, thought briefly about going back to the shop. But the idea of work bothered him and he ordered another drink, settling back to plan his way to instant riches.

'Hello, One-With-Smooth-Features. Does the day go well with you?"

"As well as possible, Praise Be. And you, One-With-Rugged-Handsomeness, how goes the work in the field?"

"Passably well. We are almost finished for the year, and just in time, too."

"I have noticed the nights grow long. Soon there will be frost on the upper levels."

"Not for a few weeks yet. Are you afraid, my little one?"

"No, not really. I—we have trust in you."

"Better you should have trust in the crystals."

"Praise Be. They are our hope."

"The fields are harvested and the next crop is seeded to harden in the freeze. There is only one more shipment to K'tar and we will be finished for the year."

"We may yet survive another freeze. May I ask you something in humble mode, Rugged-Handsomeness?"

"It is allowed to be familiar."

"There are so few little ones. Why do we not start a family?"

"We must await better times. It is asking too much that we should bring a child into these difficult days. We are tied to the sales of the crystals for the heat-units in order to survive the freeze. If a crop goes bad, it will hurt us terribly."

"There are things we can do, are there not, to protect us?"

"They are being done. We have built up a stockpile of crystals on K'tar to safeguard against a poor crop. Secondly, we have each year been turning down the heat-units to make them last longer. This is not generally known."

"I have noticed the freezes have been colder than in my youth."

"We adjust. Our activity and metabolism slow down to match the available heat. There is no danger."

"There is always danger, Rugged-Handsomeness. I admit it, I am afraid."

"Times will be better."

"Take my hand."

One-With-Rugged-Handsomeness extended a short, scaly arm and took the other's hand. Together they slipped through the oozing mud, seeking out a warmer place.

"I don't care what you say, the old man is not to be hurt."

Ross was getting angry by this time, and if he had not been in his own apartment he might have considered throwing something against the wall.

"Not *hurt,* you understand . . ." said Mik, Krin's current sleepmate. "I just want to send some of the boys around to *talk* to him. Show him the wisdom of cutting us in on the action."

"I know your 'boys,' " Ross said. "He wouldn't have an intact bone in his body by the time you got through with him."

"We'll show him he's too old; that it's time he turned the business over to younger people—namely us."

"Look. I've got nothing against the old man," said Ross.

"None of us do. It's just that he's in the way."

"He'll never agree to it, never. He actually seems to *love* those slimy worms."

"Why don't we just steal the whole mess and sell them ourselves?" Krin asked.

"Can't do that. Everyone knows the old man is the only one authorized to sell the crystals."

"Sell them on the black market," she suggested.

"No way. We wouldn't get enough for them. We'd have to take too much of a cut."

"Even if they were the only ones available?" asked Lon, who had entered during the argument.

"But they're not the only ones," said Mik.

"They could be," Lon said.

"What do you mean by that?" Ross asked.

"If there weren't any more crystals being produced and we held the whole available supply, we could get whatever we wanted for them. By then it wouldn't matter if we were 'authorized' or not. The demand is very high."

"The only problem with that is that they make them all the time."

"If all the worms were dead, they couldn't make any more crystals."

"But they're not dead," said Ross.

"They could be. Let me tell you what I found."

"Come. It is time to bless the new crop," said One-With-Rugged-Handsomeness.

"I know. I feel it, too."

From the burrows they came in small groups to the edge of the field, creating soft ripples in the smooth mud. They were overseen by One-Who-Watches, and waited for the signal.

Those-Who-Chant went first, sliding easily through the freshly planted surface. Their song filled the air with the sadness of the Project and Abandonment. *For a long time they alone crossed the field in a carefully determined pattern. The rest waited, feeling tied in spirit with Those-Who-Chant.*

Soon the melody shifted and the tune became more hopeful, almost cheerful. Words were sung of the Discovery *and of hope for the crop as well as for change in the future.*

At this, all those at the sidelines paired off and started toward the middle of the field. Soon the field was a mass of writhing bodies and churning mud as they wove intricate patterns back and forth. The freshly planted embryo stage of the crystals occasionally attached themselves to the passing bodies, only to detach themselves shorty afterward, leaving small red patches on the skin. All this was accompanied, as always, by the rising voices of Those-Who-Chant.

It appeared that this was necessary for the development of the crystals. The origin of the activity was as obscure and full of legend as the Project. It was simply done that way, that was all. Those crystals that did not attach themselves to the people never developed the music nor the particular glow. Often, crystals near the edge or those that grew wild outside the field would be found and they would appear dull beside their counterparts. It was said by some that they sucked at the soul of Those-Who-Swim. This was often disputed, and provided the main source of conversation during the freeze.

"Are you sure this is the way?" Ross asked. "I've never been so far away from the city before."

"Do you think they'd keep something this dangerous where the likes of you could stumble over it?" Lon returned, picking his way through the dark trail.

True, they were several miles away from the city. They had ridden bikes most of the way, until the trail became too rough and narrow. Soon they rounded a bend and a long, one-story building came into view.

"That's it," said Lon.

"Where do we go?" Ross asked as the two of them crept closer under the cover of darkness and the dense trees.

"Around to the left. The third window on that side will be unlocked for us. The alarm is short-circuited and the bars have been loosened."

"This friend of yours," said Ross. "Did you have to—"

"I didn't tell him anything about the crystals. He hates those worms as much as we do. He was glad to do it just to get rid of them."

The window was not very high above the ground, and they easily pushed the bars aside and climbed inside.

As they lowered themselves to the floor, they found that they were in a short hallway. Lon walked straight toward one of the heavily padlocked doors and gave it a push. It opened easily. He smiled, noticing that his friend had covered his tracks by making marks around the doorjamb that would indicate that the door had been forced.

"The guards?" Ross whispered.

"I told you not to worry," said Lon. "They've been taken care of."

One wall of the room they had entered was covered from floor to ceiling with small vaults, each with a small window and built-in combination lock. Lon removed a slip of paper from a fold in his tunic and studied the vaults until he found the one he was looking for. After a couple of tries, he was able to open it.

"This is it," said Lon, carefully removing a small black box. "There's enough concentrated virus in here to clean the life off the surface of any planet."

Those-Who-Swim gathered in exhaustion at the edge of the field. It was growing colder, and for the first time in several hours they became aware of their lack of comfort.

"Bless the crop."

"Praise Be, that they should grow to give much happiness." One-Who-Watches turned from the fields and started back to the burrows.

It was a signal, and the others would follow at a discreet distance in respect to his age and wisdom.

For now was the time for the Feast and the Laying-Down-of-Fat. They must make the final preparations for the coming freeze. But first, the Feast-of-Joy.

In spite of the short hours he put in, Ross knew the interior of the old man's shop well enough to move around in the dark. He and Lon worked their way back to the transmitter.

As Lon held a small light, Ross looked up the coordinates for Balzar. The wire loops gave off a faint glow in the darkness as the transmitter warmed up. Ross carefully set several dials and pushed a few switches. He opened the door and his friend put the box inside.

Lon pulled a small tab off the box. "Ten minutes," he said, checking his watch. "It'll go off in ten minutes."

"We're agreed, then, that we should wait a little over nine minutes and then send it, right?"

"Right. That way they can't retransmit it someplace else, like back to here."

They sat back and stared at the small box sitting in the transmitter, and the magnitude of the concentrated death within the box was matched only by their greed and their hatred for the inhabitants of Balzar.

Warm. It was so good to be warm again at last. The Feast-of-Joy was always held in Central, the largest of the burrows. The heat-unit had been turned to maximum for the event.

"The Blessing was good, One-With-Rugged-Hand-

someness, I could tell it was good. We may prosper yet."

"Yes, my little one, I too feel it was a good Blessing. Already the Elders are talking about what a rich harvest it will bring. There will be many happy songs."

"Let us eat and take warmth. Tonight the freeze seems so far away."

"Eight minutes, thirty seconds," said Ross, closing the door.

"Serves them right, stinking mudcrawlers."

"Nine minutes. Ready?"

"Give it to them!"

Ross pushed the transmit button. The glow diminished briefly and then came back to normal. It was done.

The transmitter in burrow Central chimed softly, signaling an arrival.

"What could that be?"

"I will check it, One-With-Smooth-Features. It is my duty tonight."

"I desire to watch."

"Then come."

One-With-Rugged-Handsomeness went to the transmitter and opened the door. Inside, the dark box sat for a brief moment. Then its walls unfolded, releasing a small cloud of gray gas which dissipated rapidly and became invisible.

The two at the transmitter were the only ones to see it and they died immediately, along with everyone else in the burrow. The virus spread through the air, eliminating the small village. Since the total population of Balzar was less than one hundred thousand and was concentrated in a small area, they all died very quickly.

Ross and Lon lugged the crystals out of storage. The entire stock was dull gray and silent, as were all the other crystals on all the other planets. The life cycle of the

singing crystals had been broken by the death of their symbiont hosts.

Silence replaced the soothing, hypnotic, *peaceful* music.

The next day the Thousand-Planet War began. ☆

Mistake

Larry Niven

In a cargo craft between Earth and Ganymede, Commander Elroy Barnes lolled in his crash couch with a silly smile on his face. The shovel-blade re-entry shield was swung down from the ship's nose, exposing the cabin's great curved window. Barnes watched the unwinking stars. It was a few minutes before he noticed the alien staring in at him.

He studied it. Eight feet tall, roughly reptilian, with a scaly, domed head and a mouth furnished with several dozen polished stiletto-blade teeth. Its hands were four-fingered claws, and one held a wide-barreled pistol-like tool.

Barnes lifted a languid hand and waved.

Kthistlmup was puzzled. The human's mind was muzzy, almost unreadable. The alien probed the ship for other minds, but the ship was empty save for Barnes.

Kthistlmup stepped through the glass into the cabin.

Barnes showed surprise for the first time. "Hey, that was neat! Do it again."

"There's something wrong with you," Kthistlmup projected.

Barnes grinned. "Certain measures are necessary to combat the boredom of space, to s-safeguard the sanity of our pilots." He lifted a green plastic pill bottle. "NST-24. Makes for a good trip. Nothing to do out here

till I have to guide the beast into the Jupiter system. So why not?"

"Why not what?"

"Why not take a little trip while I take the big one?"

Kthistlmup understood at last. "You've done something to your mind. Chemicals? We use direct-current stimulus on Mars."

"Mars? Are you really—"

"Barnes, I must ask you questions."

Barnes waved expansively. "Shoot."

"How well is Earth prepared against an attack from space?"

"That's a *secret*. Besides, I don't have the vaguest notion."

"You must have some notion. What's the most powerful weapon you ever heard of?"

Barnes folded his arms. "Won't say." His mind showed only a blaze of white light, which might not have anything to do with the question.

Kthistlmup tried again. "Has Earth colonized other planets?"

"Sure. Trantor, Mesklin, Barsoom, Perelandra . . ."

Barnes' mind showed only that he was lying, and Kthistlmup had lost patience. "You will answer," he said, and reached forward to take Barnes' throat delicately between four needle-sharp claws.

Barnes' eyes grew large. "Oh, oh, bad trip! Gimme, gimme the bottle of Ends! Quick!"

Kthistlmup let go. "Tell me about Earth's defenses."

"I got to have an End. Big blue bottle, it should be in the medicine chest." Barnes reached to the side. He had the wall cabinet open before Kthistlmup caught his wrist.

"This 'End.' What will it do?"

"End the trip. Fix me up."

"It will clear your mind?"

"Right."

Kthistlmup released him. He watched as Barnes swallowed an oval pill, dry.

"It's for in case we're going to run across an asteroid,

so I can recompute the course fast," Barnes explained.

Kthistlmup watched as Barnes' mind began to clear. In a minute Barnes would be unable to hide his thoughts. It wouldn't matter if he answered or not. Kthistlmup need only read the pictures his questions produced.

Barnes' mind cleared further . . . and Kthislmup found himself fading out of existence. His last thought was that it had been a perfectly natural mistake. ☆

The Bicentennial Man

Isaac Asimov

The Three Laws of Robotics

1. A robot may not injure a human being, or, through inaction, allow a human being to come to harm.

2. A robot must obey the orders given it by human beings except where such orders would conflict with the First Law.

3. A robot must protect its own existence as long as such protection does not conflict with the First or Second Law.

1

Andrew Martin said, "Thank you," and took the seat offered him. He didn't look driven to the last resort, but he had been.

He didn't, actually, look anything, for there was a smooth blankness to his face, except for the sadness one imagined one saw in his eyes. His hair was smooth, light brown, rather fine; and he had no facial hair. He looked freshly and cleanly shaved. His clothes were distinctly old-fashioned, but neat, and predominantly a velvety red-purple in color.

Facing him from behind the desk was the surgeon. The nameplate on the desk included a fully identifying series of letters and numbers which Andrew didn't bother with. To call him Doctor would be quite enough.

"When can the operation be carried through, Doctor?" he asked.

Softly, with that certain inalienable note of respect that a robot always used to a human being, the surgeon said, "I am not certain, sir, that I understand how or upon whom such an operation could be performed."

There might have been a look of respectful intransigence on the surgeon's face, if a robot of his sort, in lightly bronzed stainless steel, could have such an expression —or any expression.

Andrew Martin studied the robot's right hand, his cutting hand, as it lay motionless on the desk. The fingers were long and were shaped into artistically metallic, looping curves so graceful and appropriate that one could imagine a scalpel fitting them and becoming, temporarily, one piece with them. There would be no hesitation in his work, no stumbling, no quivering, no mistakes. That confidence came with specialization, of course, a specialization so fiercely desired by humanity that few robots were, any longer, independently brained. A surgeon, of course, would have to be. But this one, though brained, was so limited in his capacity that he did not recognize Andrew, had probably never heard of him.

"Have you ever thought you would like to be a man?" Andrew asked.

The surgeon hesitated a moment, as though the question fitted nowhere in his allotted positronic pathways. "But I am a robot, sir."

"Would it be better to be a man?"

"It would be better, sir, to be a better surgeon. I could not be so if I were a man, but only if I were a more advanced robot. I would be pleased to be a more advanced robot."

"It does not offend you that I can order you about?

That I can make you stand up, sit down, move right or left, by merely telling you to do so?"

"It is my pleasure to please you, sir. If your orders were to interfere with my functioning with respect to you or to any other human being, I would not obey you. The First Law, concerning my duty to human safety, would take precedence over the Second Law relating to obedience. Otherwise, obedience is my pleasure. Now, upon whom am I to perform this operation?"

"Upon me," Andrew said.

"But that is impossible. It is patently a damaging operation."

"That does not matter," said Andrew, calmly.

"I must not inflict damage," said the surgeon.

"On a human being, you must not," said Andrew, "but I, too, am a robot."

2

Andrew had appeared much more a robot when he had first been manufactured. He had then been as much a robot in appearance as any that had ever existed—smoothly designed and functional.

He had done well in the home to which he had been brought in those days when robots in households, or on the planet altogether, had been a rarity. There had been four in the home: Sir and Ma'am and Miss and Little Miss. He knew their names, of course, but he never used them. Sir was Gerald Martin.

His own serial number was NDR- . . . He eventually forgot the numbers. It had been a long time, of course; but if he had wanted to remember, he could not have forgotten. He had not wanted to remember.

Little Miss had been the first to call him Andrew, because she could not use the letters, and all the rest followed her in doing so.

Little Miss . . . She had lived for ninety years and was long since dead. He had tried to call her Ma'am once, but she would not allow it. Little Miss she had been to her last day.

Andrew had been intended to perform the duties of a valet, a butler, even a lady's maid. Those were the experimental days for him and, indeed, for all robots anywhere save in the industrial and exploratory factories and stations off Earth.

The Martins enjoyed him, and half the time he was prevented from doing his work because Miss and Little Miss wanted to play with him. It was Miss who first understood how this might be arranged. "We order you to play with us and you must follow orders."

"I am sorry, Miss, but a prior order from Sir must surely take precedence."

But she said, "Daddy just said he *hoped* you would take care of the cleaning. That's not much of an order. I *order* you."

Sir did not mind. Sir was fond of Miss and of Little Miss, even more than Ma'am was; and Andrew was fond of them, too. At least, the effect they had upon his actions were those which in a human being would have been called the result of fondness. Andrew thought of it as fondness for he did not know any other word for it.

It was for Little Miss that Andrew had carved a pendant out of wood. She had ordered him to. Miss, it seemed, had received an ivorite pendant with scrollwork for her birthday and Little Miss was unhappy over it. She had only a piece of wood, which she gave Andrew together with a small kitchen knife.

He had done it quickly and Little Miss had said, "That's *nice,* Andrew. I'll show it to Daddy."

Sir would not believe it. "Where did you really get this, Mandy?" Mandy was what he called Little Miss. When Little Miss assured him she was really telling the truth, he turned to Andrew. "Did you do this, Andrew?"

"Yes, Sir."

"The design, too?"

"Yes, Sir."

"From what did you copy the design?"

"It is a geometric representation, Sir, that fits the grain of the wood."

The next day, Sir brought him another piece of wood

—a larger one—and an electric vibro-knife. "Make something out of this, Andrew. Anything you want to," he said.

Andrew did so as Sir watched, then looked at the product a long time. After that, Andrew no longer waited on tables. He was ordered to read books on furniture design instead, and he learned to make cabinets and desks.

"These are amazing productions, Andrew," Sir soon told him.

"I enjoy doing them, Sir," Andrew admitted.

"Enjoy?"

"It makes the circuits of my brain somehow flow more easily. I have heard you use the word 'enjoy' and the way you use it fits the way I feel. I enjoy doing them, Sir."

3

Gerald Martin took Andrew to the regional offices of the United States Robots and Mechanical Men Corporation. As a member of the Regional Legislature he had no trouble at all in gaining an interview with the chief robopsychologist. In fact, it was only as a member of the Regional Legislature that he qualified as a robot owner in the first place—in those early days when robots were rare.

Andrew did not understand any of this at the time. But in later years, with greater learning, he could review that early scene and understand it in its proper light.

The robopsychologist, Merton Mansky, listened with a growing frown and more than once managed to stop his fingers at the point beyond which they would have irrevocably drummed on the table. He had drawn features and a lined forehead, but he might actually have been younger than he looked.

"Robotics is not an exact art, Mr. Martin," Mansky explained. "I cannot explained it to you in detail, but the mathematics governing the plotting of the positronic

pathways is far too complicated to permit of any but approximate solutions. Naturally, since we build everything around the Three Laws, those are incontrovertible. We will, of course, replace your robot—"

"Not at all," said Sir. "There is no question of failure on his part. He performs his assigned duties perfectly. The point is he also carves wood in exquisite fashion and never the same twice. He produces works of art."

Mansky looked confused. "Strange. Of course, we're attempting generalized pathways these days. Really creative, you think?"

"See for yourself." Sir handed over a little sphere of wood on which there was a playground scene in which the boys and girls were almost too small to make out, yet they were in perfect proportion and they blended so naturally with the grain that it, too, seemed to have been carved.

Mansky was incredulous. "*He* did that?" He handed it back with a shake of his head. "The luck of the draw. Something in the pathways."

"Can you do it again?"

"Probably not. Nothing like this has ever been reported."

"Good! I don't in the least mind Andrew's being the only one."

"I suspect that the company would like to have your robot back for study," Mansky said.

"Not a chance!" Sir said with sudden grimness. "Forget it." He turned to Andrew, "Let's go home, now."

"As you wish, Sir," said Andrew.

4

Miss was dating boys and wasn't about the house much. It was Little Miss, not as little as she once was, who filled Andrew's horizon now. She never forgot that the very first piece of wood carving he had done had been for her. She kept it on a silver chain about her neck.

It was she who first objected to Sir's habit of giving

away Andrew's work. "Come on, Dad, if anyone wants one of them, let him pay for it. It's worth it."

"It isn't like you to be greedy, Mandy."

"Not for us, Dad. For the artist."

Andrew had never heard the word before, and when he had a moment to himself he looked it up in the dictionary.

Then there was another trip, this time to Sir's lawyer.

"What do you think of this, John?" Sir asked.

The lawyer was John Finegold. He had white hair and a pudgy belly, and the rims of his contact lenses were tinted a bright green. He looked at the small plaque Sir had given him. "This is beautiful. But I've already heard the news. Isn't this a carving made by your robot? The one you've brought with you."

"Yes, Andrew does them. Don't you, Andrew?"

"Yes, Sir," said Andrew.

"How much would you pay for that, John?" Sir asked.

"I can't say. I'm not a collector of such things."

"Would you believe I have been offered two hundred and fifty dollars for that small thing. Andrew has made chairs that have sold for five hundred dollars. There's two hundred thousand dollars in the bank from Andrew's products."

"Good heavens, he's making you rich, Gerald."

"Half rich," said Sir. "Half of it is in an account in the name of Andrew Martin."

"The robot?"

"That's right, and I want to know if it's legal."

"Legal. . . ?" Feingold's chair creaked as he leaned back in it. "There are no precedents, Gerald. How did your robot sign the necessary papers?"

"He can sign his name, so I brought in the signature. I didn't bring him along, however. Now, is there anything further that ought to be done?"

"Um." Feingold's eyes seemed to turn inward for a moment. Then he said, "Well, we can set up a trust to handle all finances in his name and that will place a layer of insulation between him and the hostile world. Be-

yond that, my advice is you do nothing. No one has stopped you so far. If anyone objects, let *him* bring suit."

"And will you take the case if the suit is brought?"

"For a retainer, certainly."

"How much?"

"Something like that," Feingold said, and pointed to the wooden plaque.

"Fair enough," said Sir.

Feingold chuckled as he turned to the robot. "Andrew, are you pleased that you have money?"

"Yes, sir."

"What do you plan to do with it?"

"Pay for things, sir, which otherwise Sir would have to pay for. It would save him expense, sir."

5

Such occasions arose. Repairs were expensive, and revisions were even more so. With the years, new models of robots were produced and Sir saw to it that Andrew had the advantage of every new device, until he was a model of metallic excellence. It was all done at Andrew's expense. Andrew insisted on that.

Only his positronic pathways were untouched. Sir insisted on that.

"The new models aren't as good as you are, Andrew," he said. "The new robots are worthless. The company has learned to make the pathways more precise, more closely on the nose, more deeply on the track. The new robots don't shift. They do what they're designed for and never stray. I like you better."

"Thank you, Sir."

"And it's your doing, Andrew, don't you forget that. I am certain Mansky put an end to generalized pathways as soon as he had a good look at you. He didn't like the unpredictability. Do you know how many times he asked for you back so he could place you under study? Nine times! I never let him have you, though; and now that he's retired, we may have some peace.

So Sir's hair thinned and grayed and his face grew pouchy, while Andrew looked even better than he had when he first joined the family. Ma'am had joined an art colony somewhere in Europe, and Miss was a poet in New York. They wrote sometimes, but not often. Little Miss was married and lived not far away. She said she did not want to leave Andrew. When her child, Little Sir, was born, she let Andrew hold the bottle and feed him.

With the birth of a grandson, Andrew felt that Sir finally had someone to replace those who had gone. Therefore, it would not be so unfair now to come to him with the request.

"Sir, it is kind of you to have allowed me to spend my money as I wished."

"It was your money, Andrew."

"Only by your voluntary act, Sir. I do not believe the law would have stopped you from keeping it all."

"The law won't persuade me to do wrong, Andrew."

"Despite all expenses, and despite taxes, too, Sir, I have nearly six hundred thousand dollars."

"I know that, Andrew."

"I want to give it to you, Sir.

"I won't take it, Andrew."

"In exchange for something you can give me, Sir."

"Oh? What is that, Andrew?"

"My freedom, Sir."

"Your—"

"I wish to buy my freedom, Sir."

6

It wasn't that easy. Sir had flushed, had said, "For God's sake!" Then he had turned on his heel and stalked away.

It was Little Miss who finally brought him round, defiantly and harshly—and in front of Andrew. For thirty years no one had ever hesitated to talk in front of Andrew, whether or not the matter involved Andrew. He was only a robot.

"Dad, why are you taking this as a personal affront?

He'll still be here. He'll still be loyal. He can't help that; it's built in. All he wants is a form of words. He wants to be called free. Is that so terrible? Hasn't he earned this chance? Heavens, he and I have been talking about it for years!"

"Talking about it for years, have you?"

"Yes, and over and over again he postponed it for fear he would hurt you. I *made* him put the matter up to you."

"He doesn't know what freedom is. He's a robot."

"Dad, you don't know him. He's read everything in the library. I don't know what he feels inside, but I don't know what *you* feel inside either. When you talk to him you'll find he reacts to the various abstractions as you and I do, and what else counts? If someone else's reactions are like your own, what more can you ask for?"

"The law won't take that attitude," Sir said, angrily. "See here, you!" He turned to Andrew with a deliberate grate in his voice. "I can't free you except by doing it legally. If this gets into the courts, you not only won't get your freedom but the law will take official cognizance of your money. They'll tell you that a robot has no right to earn money. Is this rigmarole worth losing your money?"

"Freedom is without price, Sir," said Andrew. "Even the chance of freedom is worth the money."

7

It seemed the court might also take the attitude that freedom was without price, and might decide that for no price, however great, could a robot buy its freedom.

The simple statement of the regional attorney who represented those who had brought a class action to oppose the freedom was this: "The word 'freedom' has no meaning when applied to a robot. Only a human being can be free." He said it several times, when it seemed appropriate; slowly, with his hand coming down rhythmically on the desk before him to mark the words.

Little Miss asked permission to speak on behalf of Andrew.

She was recognized by her full name, something Andrew had never heard pronounced before: "Amanda Laura Martin Charney may approach the bench."

"Thank you, Your Honor. I am not a lawyer and I don't know the proper way of phrasing things, but I hope you will listen to my meaning and ignore the words.

"Let's understand what it means to be free in Andrew's case. In some ways, he *is* free. I think it's at least twenty years since anyone in the Martin family gave him an order to do something that we felt he might not do of his own accord. But we can, if we wish, give him an order to do anything, couching it as harshly as we wish, because he is a machine that belongs to us. Why should we be in a position to do so, when he has served us so long, so faithfully, and has earned so much money for us? He owes us nothing more. The debit is entirely on the other side.

"Even if we were legally forbidden to place Andrew in involuntary servitude, he would still serve us voluntarily. Making him free would be a trick of words only, but it would mean much to him. It would give him everything and cost us nothing."

For a moment the judge seemed to be suppressing a smile. "I see your point, Mrs. Charney. The fact is that there is no binding law in this respect and no precedent. There is, however, the unspoken assumption that only a man may enjoy freedom. I can make new law here, subject to reversal in a higher court; but I cannot lightly run counter to that assumption. Let me address the robot. Andrew!"

"Yes, Your Honor."

It was the first time Andrew had spoken in court, and the judge seemed astonished for a moment at the human timbre of his voice.

"Why do you want to be free, Andrew? In what way will this matter to you?"

"Would *you* wish to be a slave, Your Honor," Andrew asked.

"But you are not a slave. You are a perfectly good robot—a genius of a robot, I am given to understand, capable of an artistic expression that can be matched nowhere. What more could you do if you were free?"

"Perhaps no more than I do now, Your Honor, but with greater joy. It has been said in this courtroom that only a human being can be free. It seems to me that only someone who *wishes* for freedom can be free. I wish for freedom."

And it was that statement that cued the judge. The crucial sentence in his decision was "There is no right to deny freedom to any object with a mind advanced enough to grasp the concept and desire the state."

It was eventually upheld by the World Court.

8

Sir remained displeased, and his harsh voice made Andrew feel as if he were being short-circuited. "I don't want your damned money, Andrew. I'll take it only because you won't feel free otherwise. From now on, you can select your own jobs and do them as you please. I will give you no orders, except this one: Do as you please. But I am still responsible for you. That's part of the court order. I hope you understand that."

Little Miss interrupted. "Don't be irascible, Dad. The responsibility is no great chore. You know you won't have to do a thing. The Three Laws still hold."

"Then how is he free?"

"Are not human beings bound by their laws, Sir?" Andrew replied.

"I'm not going to argue." Sir left the room, and Andrew saw him only infrequently after that.

Little Miss came to see him frequently in the small house that had been built and made over for him. It had no kitchen, of course, nor bathroom facilities. It had just two rooms; one was a library and one was a combination storeroom and workroom. Andrew accepted many

commissions and worked harder as a free robot than he ever had before, till the cost of the house was paid for and the structure was signed over to him.

One day Little Sir—no, 'George!'—came. Little Sir had insisted on that after the court decision. "A free robot doesn't call anyone Little Sir," George had said. "I call you Andrew. You must call me George."

His preference was phrased as an order, so Andrew called him George—but Little Miss remained Little Miss.

One day when George came alone, it was to say that Sir was dying. Little Miss was at the bedside, but Sir wanted Andrew as well.

Sir's voice was still quite strong, though he seemed unable to move much. He struggled to raise his hand.

"Andrew," he said, "Andrew— Don't help me, George. I'm only dying; I'm not crippled. Andrew, I'm glad you're free. I just wanted to tell you that."

Andrew did not know what to say. He had never been at the side of someone dying before, but he knew it was the human way of ceasing to function. It was an involuntary and irreversible dismantling, and Andrew did not know what to say that might be appropriate. He could only remain standing, absolutely silent, absolutely motionless.

When it was over, Little Miss said to him, "He may not have seemed friendly to you toward the end, Andrew, but he was old, you know; and it hurt him that you should want to be free."

Then Andrew found the words. "I would never have been free without him, Little Miss."

9

Only after Sir's death did Andrew begin to wear clothes. He began with an old pair of trousers at first, a pair that George had given him.

George was married now, and a lawyer. He had joined Feingold's firm. Old Feingold was long since dead, but his daughter had carried on. Eventually the

firm's name became Feingold and Martin. It remained so even when the daughter retired and no Feingold took her place. At the time Andrew first put on clothes, the Martin name had just been added to the firm.

George had tried not to smile the first time he saw Andrew attempting to put on trousers, but to Andrew's eyes the smile was clearly there. George showed Andrew how to manipulate the static charge to allow the trousers to open, wrap about his lower body, and move shut. George demonstrated on his own trousers, but Andrew was quite aware it would take him a while to duplicate that one flowing motion.

"But why do you want trousers, Andrew? Your body is so beautifully functional it's a shame to cover it—especially when you needn't worry about either temperature control or modesty. And the material doesn't cling properly—not on metal."

Andrew held his ground. "Are not human bodies beautifully functional, George? Yet you cover yourselves."

"For warmth, for cleanliness, for protection, for decorativeness. None of that applies to you."

"I feel bare without clothes. I feel different, George," Andrew responded.

"Different! Andrew, there are millions of robots on Earth now. In this region, according to the last census, there are almost as many robots as there are men."

"I know, George. There are robots doing every conceivable type of work."

"And none of them wear clothes."

"But none of them are free, George."

Little by little, Andrew added to his wardrobe. He was inhibited by George's smile and by the stares of the people who commissioned work.

He might be free, but there was built into Andrew a carefully detailed program concerning his behavior to people, and it was only by the tiniest steps that he dared advance; open disapproval would set him back months. Not everyone accepted Andrew as free. He was incapable of resenting that, and yet there was a difficulty about

his thinking process when he thought of it. Most of all, he tended to avoid putting on clothes—or too many of them—when he thought Little Miss might come to visit him. She was older now and was often away in some warmer climate, but when she returned the first thing she did was visit him.

On one of her visits, George said, ruefully, "She's got me, Andrew. I'll be running for the legislature next year. 'Like grandfather,' she says, 'like grandson.' "

"Like grandfather . . ." Andrew stopped, uncertain.

"I mean that I, George, the grandson, will be like Sir, the grandfather, who was in the legislature once."

"It would be pleasant, George, if Sir were still—" He paused, for he did not want to say, "in working order." That seemed inappropriate.

"Alive," George said. "Yes, I think of the old monster now and then, too."

Andrew often thought about this conversation. He had noticed his own incapacity in speech when talking with George. Somehow the language had changed since Andrew had come into being with a built-in vocabulary. Then, too, George used a colloquial speech, as Sir and Little Miss had not. Why should he have called Sir a monster when surely that word was not appropriate. Andrew could not even turn to his own books for guidance. They were old, and most dealt with woodworking, with art, with furniture design. There were none on language, none on the ways of human beings.

Finally, it seemed to him that he must seek the proper books; and as a free robot, he felt he must not ask George. He would go to town and use the library. It was a triumphant decision and he felt his electropotential grow distinctly higher until he had to throw in an impedance coil.

He put on a full costume, including even a shoulder chain of wood. He would have preferred the glitter plastic, but George had said that wood was much more appropriate and that polished cedar was considerably more valuable as well.

He had placed a hundred feet between himself and

the house before gathering resistance brought him to a halt. He shifted the impedance coil out of circuit, and when that did not seem to help enough he returned to his home and on a piece of notepaper wrote neatly, "I have gone to the library," and placed it in clear view on his worktable.

10

Andrew never quite got to the library.

He had studied the map. He knew the route, but not the appearance of it. The actual landmarks did not resemble the symbols on the map and he would hesitate. Eventually, he thought he must have somehow gone wrong, for everything looked strange.

He passed an occasional field-robot, but by the time he decided he should ask his way none were in sight. A vehicle passed and did not stop.

Andrew stood irresolute, which meant calmly motionless, for coming across the field toward him were two human beings.

He turned to face them, and they altered their course to meet him. A moment before, they had been talking loudly. He had heard their voices. But now they were silent. They had the look that Andrew associated with human uncertainty; and they were young, but not very young. Twenty, perhaps? Andrew could never judge human age.

"Would you describe to me the route to the town library, sirs?"

One of them, the taller of the two, whose tall hat lengthened him still farther, almost grotesquely, said, not to Andrew, but to the other, "It's a robot."

The other had a bulbous nose and heavy eyelids. He said, not to Andrew but to the first, "It's wearing clothes."

The tall one snapped his fingers. "It's the free robot. They have a robot at the old Martin place who isn't owned by anybody. Why else would it be wearing clothes?"

"Ask it," said the one with the nose.

"Are you the Martin robot?" asked the tall one.

"I am Andrew Martin, sir," Andrew said.

"Good. Take off your clothes. Robots don't wear clothes." He said to the other, "That's disgusting. Look at him!"

Andrew hesitated. He hadn't heard an order in that tone of voice in so long that his Second Law circuits had momentarily jammed.

The tall one repeated, "Take off your clothes. I order you."

Slowly, Andrew began to remove them.

"Just drop them," said the tall one.

The nose said, "If it doesn't belong to anyone, it could be ours as much as someone else's."

"Anyway," said the tall one, "who's to object to anything we do. We're not damaging property." He turned to Andrew. "Stand on your head."

"The head is not meant—" Andrew began.

"That's an order. If you don't know how, try anyway."

Andrew hesitated again, then bent to put his head on the ground. He tried to lift his legs but fell, heavily.

The tall one said, "Just lie there." He said to the other, "We can take him apart. Ever take a robot apart?"

"Will he let us?"

"How can he stop us?"

There was no way Andrew could stop them, if they ordered him in a forceful enough manner not to resist. The Second Law of obedience took precedence over the Third Law of self-preservation. In any case, he could not defend himself without possibly hurting them, and that would mean breaking the First Law. At that thought, he felt every motile unit contract slightly and he quivered as he lay there.

The tall one walked over and pushed at him with his foot. "He's heavy. I think we'll need tools to do the job."

The nose said, "We could order him to take himself apart. It would be fun to watch him try."

"Yes," said the tall one, thoughtfully, "but let's get him off the road. If someone comes along—"

It was too late. Someone had, indeed, come along and it was George. From where he lay, Andrew had seen him topping a small rise in the middle distance. He would have liked to signal him in some way, but the last order had been "Just lie there!"

George was running now, and he arrived on the scene somewhat winded. The two young men stepped back a little and then waited thoughtfully.

"Andrew, has something gone wrong?" George asked, anxiously.

Andrew replied, "I am well, George."

"Then stand up. What happened to your clothes?"

"That your robot, Mac?" the tall young man asked.

George turned sharply. "He's no one's robot. What's been going on here."

"We politely asked him to take his clothes off. What's that to you, if you don't own him."

George turned to Andrew. "What were they doing, Andrew?"

"It was their intention in some way to dismember me. They were about to move me to a quiet spot and order me to dismember myself."

George looked at the two young men, and his chin trembled.

The young men retreated no farther. They were smiling.

The tall one said, lightly, "What are you going to do, pudgy? Attack us?"

George said, "No. I don't have to. This robot has been with my family for over seventy-five years. He knows us and he values us more than he values anyone else. I am going to tell him that you two are threatening my life and that you plan to kill me. I will ask him to defend me. In choosing between me and you two, he will choose me. Do you know what will happen to you when he attacks you?"

The two were backing away slightly, looking uneasy.

George said, sharply, "Andrew, I am in danger and

about to come to harm from these young men. Move toward them!"

Andrew did so, and the young men did not wait. They ran.

"All right, Andrew, relax," George said. He looked unstrung. He was far past the age where he could face the possibility of a dustup with one young man, let alone two.

"I couldn't have hurt them, George. I could see they were not attacking you."

"I didn't order you to attack them. I only told you to move toward them. Their own fears did the rest."

"How can they fear robots?"

"It's a disease of mankind, one which has not yet been cured. But never mind that. What the devil are you doing here, Andrew? Good thing I found your note. I was just on the point of turning back and hiring a helicopter when I found you. How did you get it into your head to go to the library? I would have brought you any books you needed."

"I am a—" Andrew began.

"Free robot. Yes, yes. All right, what did you want in the library?"

"I want to know more about human beings, about the world, about everything. And about robots, George. I want to write a history about robots."

George put his arm on the other's shoulder. "Well, let's walk home. But pick up your clothes first. Andrew, there are a million books on robotics and all of them include histories of the science. The world is growing saturated not only with robots but with information about robots."

Andrew shook his head, a human gesture he had lately begun to adopt. "Not a history of robotics, George. A history of *robots,* by a robot. I want to explain how robots feel about what has happened since the first ones were allowed to work and live on Earth."

George's eyebrows lifted, but he said nothing in direct response.

11

Little Miss was just past her eighty-third birthday, but there was nothing about her that was lacking in either energy or determination. She gestured with her cane oftener than she propped herself up with it.

She listened to the story in a fury of indignation. "George, that's horrible. Who were those young ruffians?"

"I don't know. What difference does it make? In the end they did not do any damage."

"They might have. You're a lawyer, George; and if you're well off, it's entirely due to the talents of Andrew. It was the money *he* earned that is the foundation of everything we have. He provides the continuity for this family, and I will *not* have him treated as a wind-up toy."

"What would you have me do, Mother?" George asked.

"I said you're a lawyer. Don't you listen? You set up a test case somehow, and you force the regional courts to declare for robot rights and get the legislature to pass the necessary bills. Carry the whole thing to the World Court, if you have to. I'll be watching, George, and I'll tolerate no shirking."

She was serious, so what began as a way of soothing the fearsome old lady became an involved matter with enough legal entanglement to make it interesting. As senior partner of Feingold and Martin, George plotted strategy. But he left the actual work to his junior partners, with much of it a matter for his son, Paul, who was also a member of the firm and who reported dutifully nearly every day to his grandmother. She, in turn, discussed the case every day with Andrew.

Andrew was deeply involved. His work on his book on robots was delayed and delayed again, as he pored over the legal arguments and even, at times, made very diffident suggestions. "George told me that day I was attacked that human beings have always been afraid of ro-

bots," he said one day. "As long as they are, the courts and the legislatures are not likely to work hard on behalf of robots. Should not something be done about public opinion?"

So while Paul stayed in court, George took to the public platform. It gave him the advantage of being informal, and he even went so far sometimes as to wear the new, loose style of clothing which he called drapery.

Paul chided him, "Just don't trip over it on stage, Dad."

George replied, despondently, "I'll try not to."

He addressed the annual convention of holo-news editors on one occasion and said, in part: "If, by virtue of the Second Law, we can demand of any robot unlimited obedience in all respects not involving harm to a human being, then any human being, *any* human being, has a fearsome power over any robot, *any* robot. In particular, since Second Law supersedes Third Law, *any* human being can use the law of obedience to overcome the law of self-protection. He can order any robot to damage itself or even to destroy itself for any reason, or for no reason.

"Is this just? Would we treat an animal so? Even an inanimate object which had given us good service has a claim on our consideration. And a robot is not insensitive; it is not an animal. It can think well enough so that it can talk to us, reason with us, joke with us. Can we treat them as friends, can we work together with them, and not give them some of the fruits of that friendship, some of the benefits of co-working?

"If a man has the right to give a robot any order that does not involve harm to a human being, he should have the decency never to give a robot any order that involves harm to a robot, unless human safety absolutely requires it. With great power goes great responsibility, and if the robots have Three Laws to protect men, is it too much to ask that men have a law or two to protect robots?"

Andrew was right. It was the battle over public opinion that held the key to courts and legislature. In the

end, a law was passed that set up conditions under which robot-harming orders were forbidden. It was endlessly qualified and the punishments for violating the law were totally inadequate, but the principle was established. The final passage by the World Legislature came through on the day of Little Miss' death.

That was no coincidence. Little Miss held on to life desperately during the last debate and let go only when word of victory arrived. Her last smile was for Andrew. Her last words were, "You have been good to us, Andrew." She died with her hand holding his, while her son and his wife and children remained at a respectful distance from both.

12

Andrew waited patiently when the receptionist-robot disappeared into the inner office. The receptionist might have used the holographic chatterbox, but unquestionably it was perturbed by having to deal with another robot rather than with a human being.

Andrew passed the time revolving the matter in his mind: Could "unroboted" be used as an analog of "unmanned," or had unmanned become a metaphoric term sufficiently divorced from its original literal meaning to be applied to robots—or to women for that matter? Such problems frequently arose as he worked on his book on robots. The trick of thinking out sentences to express all complexities had undoubtedly increased his vocabulary.

Occasionally, someone came into the room to stare at him and he did not try to avoid the glance. He looked at each calmly, and each in turn looked away.

Paul Martin finally emerged. He looked surprised, or he would have if Andrew could have made out his expression with certainty. Paul had taken to wearing the heavy makeup that fashion was dictating for both sexes. Though it made sharper and firmer the somewhat bland lines of Paul's face, Andrew disapproved. He found that disapproving of human beings, as long as he did not ex-

press it verbally, did not make him very uneasy. He could even write the disapproval. He was sure it had not always been so.

"Come in, Andrew. I'm sorry I made you wait, but there was something I *had* to finish. Come in. You had said you wanted to talk to me, but I didn't know you meant here in town."

"If you are busy, Paul, I am prepared to continue to wait."

Paul glanced at the interplay of shifting shadows on the dial on the wall that served as timepiece and said, "I can make some time. Did you come alone?"

"I hired an automatobile."

"Any trouble?" Paul asked, with more than a trace of anxiety.

"I wasn't expecting any. My rights are protected."

Paul looked all the more anxious for that. "Andrew, I've explained that the law is unenforceable, at least under most conditions. And if you insist on wearing clothes, you'll run into trouble eventually; just like that first time."

"And *only* time, Paul. I'm sorry you are displeased."

"Well, look at it this way: you are virtually a living legend, Andrew, and you are too valuable in many different ways for you to have any right to take chances with yourself. By the way, how's the book coming?"

"I am approaching the end, Paul. The publisher is quite pleased."

"Good!"

"I don't know that he's necessarily pleased with the book as a book. I think he expects to sell many copies because it's written by a robot and that's what pleases him."

"Only human, I'm afraid."

"I am not displeased. Let it sell for whatever reason, since it will mean money and I can use some."

"Grandmother left you—"

"Little Miss was generous, and I'm sure I can count on the family to help me out further. But it is the royal-

ties from the book on which I am counting to help me through the next step."

"What next step is that?"

"I wish to see the head of U.S. Robots and Mechanical Men Corporation. I have tried to make an appointment; but so far I have not been able to reach him. The Corporation did not cooperate with me in the writing of the book, so I am not surprised, you understand."

Paul was clearly amused. "Cooperation is the last thing you can expect. They didn't cooperate with us in our great fight for robot rights. Quite the reverse, and you can see why. Give a robot rights and people may not want to buy them."

"Nevertheless," said Andrew, "if *you* call them, you may be able to obtain an interview for me."

"I'm no more popular with them than you are, Andrew."

"But perhaps you can hint that by seeing me they may head off a campaign by Feingold and Martin to strengthen the rights of robots further."

"Wouldn't that be a lie, Andrew?"

"Yes, Paul, and I can't tell one. That is why you must call."

"Ah, you can't lie, but you can urge me to tell a lie, is that it? You're getting more human all the time, Andrew."

13

The meeting was not easy to arrange, even with Paul's supposedly weighted name. But it finally came about. When it did, Harley Smythe-Robertson, who, on his mother's side, was descended from the original founder of the corporation and who had adopted the hyphenation to indicate it, looked remarkably unhappy. He was approaching retirement age and his entire tenure as president had been devoted to the matter of robot rights. His gray hair was plastered thinly over the top of his scalp; his face was not made up, and he eyed Andrew with brief hostility from time to time.

Andrew began the conversation. "Sir, nearly a century ago, I was told by a Merton Mansky of this corporation that the mathematics governing the plotting of the positronic pathways was far too complicated to permit of any but approximate solutions and that, therefore, my own capacities were not fully predictable."

"That was a century ago." Smythe-Robertson hesitated, then said icily, "*Sir.* It is true no longer. Our robots are made with precision now and are trained precisely to their jobs."

"Yes," said Paul, who had come along, as he said, to make sure that the corporation played fair, "with the result that my receptionist must be guided at every point once events depart from the conventional, however slightly."

"You would be much more displeased if it were to improvise," Smythe-Robertson said.

"Then you no longer manufacture robots like myself which are flexible and adaptable."

"No longer."

"The research I have done in connection with my book," said Andrew, "indicates that I am the oldest robot presently in active operation."

"The oldest presently," said Smythe-Robertson, "and the oldest ever. The oldest that will ever be. No robot is useful after the twenty-fifth year. They are called in and replaced with newer models."

"No robot as presently manufactured is useful after the *twentieth* year," said Paul, with a note of sarcasm creeping into his voice. "Andrew is quite exceptional in this respect."

Andrew, adhering to the path he had marked out for himself, continued, "As the oldest robot in the world and the most flexible, am I not unusual enough to merit special treatment from the company?"

"Not at all," Smythe-Robertson said, freezing up. "Your unusualness is an embarrassment to the company. If you were on lease, instead of having been an outright sale through some mischance, you would long since have been replaced."

"But that is exactly the point," said Andrew. "I am a free robot and I own myself. Therefore I come to you and ask you to replace me. You cannot do this without the owner's consent. Nowadays, that consent is extorted as a condition of the lease, but in my time this did not happen."

Smythe-Robertson was looking both startled and puzzled, and for a moment there was silence. Andrew found himself staring at the hologram on the wall. It was a death mask of Susan Calvin, patron saint of all roboticists. She had been dead for nearly two centuries now, but as a result of writing his book Andrew knew her so well he could half persuade himself that he had met her in life.

Finally Smythe-Robertson asked, "How can I replace you for you? If I replace you, as robot, how can I donate the new robot to you as owner since in the very act of replacement you cease to exist." He smiled grimly.

"Not at all difficult," Paul interposed. "The seat of Andrew's personality is his positronic brain and it is the one part that cannot be replaced without creating a new robot. The positronic brain, therefore, is Andrew the owner. Every other part of the robotic body can be replaced without affecting the robot's personality, and those other parts are the brain's possessions. Andrew, I should say, wants to supply his brain with a new robotic body."

"That's right," said Andrew, calmly. He turned to Smythe-Robertson. "You have manufactured androids, haven't you? Robots that have the outward appearance of humans, complete to the texture of the skin?"

"Yes, we have. They worked perfectly well, with their synthetic fibrous skins and tendons. There was virtually no metal anywhere except for the brain, yet they were nearly as tough as metal robots. They were tougher, weight for weight."

Paul looked interested. "I didn't know that. How many are on the market?"

"None," said Smythe-Robertson. "They were much more expensive than metal models and a market survey

showed they would not be accepted. They looked too human."

Andrew was impressed. "But the corporation retains its expertise, I assume. Since it does, I wish to request that I be replaced by an organic robot, an android."

Paul looked surprised. "Good Lord!" he said.

Smythe-Robertson stiffened. "Quite impossible!"

"Why is it impossible?" Andrew asked. "I will pay any reasonable fee, of course."

"We do not manufacture androids."

"You do not *choose* to manufacture androids," Paul interjected quickly. "That is not the same as being unable to manufacture them."

"Nevertheless," Smythe-Robertson responded, "the manufacture of androids is against public policy."

"There is no law against it," said Paul.

"Nevertheless, we do not manufacture them—and we will not."

Paul cleared his throat. "Mr. Smythe-Robertson," he said, "Andrew is a free robot who comes under the purview of the law guaranteeing robot rights. You are aware of this, I take it?"

"Only too well."

"This robot, as a free robot, chooses to wear clothes. This results in his being frequently humiliated by thoughtless human beings despite the law against the humiliation of robots. It is difficult to prosecute vague offenses that don't meet with the general disapproval of those who must decide on guilt and innocence."

"U.S. Robots understood that from the start. Your father's firm unfortunately did not."

"My father is dead now, but what I see is that we have here a clear offense with a clear target."

"What are you talking about?" said Smythe-Robertson.

"My client, Andrew Martin—he has just become my client—is a free robot who is entitled to ask U.S. Robots and Mechanical Men Corporation for the right of replacement, which the corporation supplies to anyone

who owns a robot for more than twenty-five years. In fact, the corporation insists on such replacement."

Paul was smiling and thoroughly at ease. "The positronic brain of my client," he went on, "is the owner of the body of my client—which is certainly more than twenty-five years old. The positronic brain demands the replacement of the body and offers to pay any reasonable fee for an android body as that replacement. If you refuse the request, my client undergoes humiliation and we will sue.

"While public opinion would not ordinarily support the claim of a robot in such a case, may I remind you that U.S. Robots is not popular with the public generally. Even those who most use and profit from robots are suspicious of the corporation. This may be a hangover from the days when robots were widely feared. It may be resentment against the power and wealth of U.S. Robots, which has a worldwide monopoly. Whatever the cause may be, the resentment exists. I think you will find that you would prefer not to be faced with a lawsuit, particularly since my client is wealthy and will live for many more centuries and will have no reason to refrain from fighting the battle forever."

Smythe-Robertson had slowly reddened. "You are trying to force—"

"I force you to do nothing," said Paul. "If you wish to refuse to accede to my client's reasonable request, you may by all means do so and we will leave without another word. But we will sue, as is certainly our right, and you will find that you will eventually lose."

"Well . . ."

"I see that you are going to accede," said Paul. "You may hesitate but you will come to it in the end. Let me assure you, then, of one further point: If, in the process of transferring my client's positronic brain from his present body to an organic one, there is any damage, however slight, then I will never rest until I've nailed the corporation to the ground. I will, if necessary, take every possible step to mobilize public opnion against the corporation if one brainpath of my client's platinum-irid-

ium essence is scrambled." He turned to Andrew and asked, "Do you agree to all this, Andrew?"

Andrew hesitated a full minute. It amounted to the approval of lying, of blackmail, of the badgering and humiliation of a human being. But not physical harm, he told himself, not physical harm.

He managed at last to come out with a rather faint "Yes."

14

He felt as though he were being constructed again. For days, then for weeks, finally for months, Andrew found himself not himself somehow, and the simplest actions kept giving rise to hesitation.

Paul was frantic. "They've damaged you, Andrew. We'll have to institute suit!"

Andrew spoke very slowly. "You . . . mustn't. You'll never be able to prove . . . something . . . like m-m-m-m—"

"Malice?"

"Malice. Besides, I grow . . . stronger, better. It's the tr-tr-tr—"

"Tremble?"

"Trauma. After all, there's never been such an op-op-op- . . . before."

Andrew could feel his brain from the inside. No one else could. He knew he was well, and during the months that it took him to learn full coordination and full positronic interplay he spent hours before the mirror.

Not quite human! The face was stiff—too stiff—and the motions were too deliberate. They lacked the careless, free flow of the human being, but perhaps that might come with time. At least now he could wear clothes without the ridiculous anomaly of a metal face going along with it.

Eventually, he said, "I will be going back to work."

Paul laughed. "That means you are well. What will you be doing? Another book?"

"No," said Andrew, seriously. "I live too long for any

one career to seize me by the throat and never let me go. There was a time when I was primarily an artist, and I can still turn to that. And there was a time when I was a historian, and I can still turn to that. But now I wish to be a robobiologist."

"A robopsychologist, you mean."

"No. That would imply the study of positronic brains, and at the moment I lack the desire to do that. A robobiologist, it seems to me, would be concerned with the working of the body attached to that brain."

"Wouldn't that be a roboticist?"

"A roboticist works with a metal body. I would be studying an organic humanoid body, of which I have the only one, as far as I know."

"You narrow your field," said Paul, thoughtfully. "As an artist, all conception is yours; as a historian you deal chiefly with robots; as a robobiologist, you will deal with yourself."

Andrew nodded. "It would seem so."

Andrew had to start from the very beginning, for he knew nothing of ordinary biology and almost nothing of science. He became a familiar sight in the libraries, where he sat at the electronic indices for hours at a time, looking perfectly normal in clothes. Those few who knew he was a robot in no way interfered with him.

He built a laboratory in a room which he added to his house; and his library grew, too.

Years passed, and Paul came to him one day and said, "It's a pity you're no longer working on the history of robots. I understand U.S. Robots is adopting a radically new policy."

Paul had aged, and his deteriorating eyes had been replaced with photoptic cells. In that respect, he had drawn closer to Andrew.

"What have they done?" Andrew asked.

"They are manufacturing central computers, gigantic positronic brains, really, which communicate with anywhere from a dozen to a thousand robots by microwave. The robots themselves have no brains at all. They are

the limbs of the gigantic brain, and the two are physically separate."

"Is that more efficient."

"U.S. Robots claims it is. Smythe-Robertson established the new direction before he died, however, and it's my notion that it's a backlash at you. U.S. Robots is determined that they will make no robots that will give them the type of trouble you have, and for that reason they separate brain and body. The brain will have no body to wish changed; the body will have no brain to wish anything.

"It's amazing, Andrew," Paul went on, "the influence you have had on the history of robots. It was your artistry that encouraged U.S. Robots to make robots more precise and specialized; it was your freedom that resulted in the establishment of the principle of robotic rights; it was your insistence on an android body that made U.S. Robots switch to brain–body separation."

Andrew grew thoughtful. "I suppose in the end the corporation will produce one vast brain controlling several billion robotic bodies. All the eggs will be in one basket. Dangerous. Not proper at all."

"I think you're right," said Paul, "but I don't suspect it will come to pass for a century at least and I won't live to see it. In fact, I may not live to see next year."

"Paul!" cried Andrew, in concern.

Paul shrugged. "Men are mortal, Andrew. We're not like you. It doesn't matter too much, but it does make it important to assure you on one point. I'm the last of the human Martins. The money I control personally will be left to the trust in your name, and as far as anyone can foresee the future, you will be economically secure."

"Unnecessary," Andrew said, with difficulty. In all this time, he could not get used to the deaths of the Martins.

"Let's not argue. That's the way it's going to be. Now, what are you working on?"

"I am designing a system for allowing androids—myself—to gain energy from the combustion of hydrocarbons, rather than from atomic cells."

Paul raised his eyebrows. "So that they will breathe and eat?"

"Yes."

"How long have you been pushing in that direction?"

"For a long time now, but I think I have finally designed an adequate combustion chamber for catalyzed controlled breakdown."

"But why, Andrew? The atomic cell is surely infinitely better."

"In some ways, perhaps. But the atomic cell is inhuman."

15

It took time, but Andrew had time. In the first place, he did not wish to do anything till Paul had died in peace. With the death of the great-grandson of Sir, Andrew felt more nearly exposed to a hostile world and for that reason was all the more determined along the path he had chosen.

Yet he was not really alone. If a man had died, the firm of Feingold and Martin lived, for a corporation does not die any more than a robot does.

The firm had its directions and it followed them soullessly. By way of the trust and through the law firm, Andrew continued to be wealthy. In return for their own large annual retainer, Feingold and Martin involved themselves in the legal aspects of the new combustion chamber. But when the time came for Andrew to visit U.S. Robots and Mechanical Men Corporation, he did it alone. Once he had gone with Sir and once with Paul. This time, the third time, he was alone and manlike.

U.S. Robots had changed. The actual production plant had been shifted to a large space station, as had grown to be the case with more and more industries. With them had gone many robots. The Earth itself was becoming parklike, with its one-billion-person population stabilized and perhaps not more than thirty percent of its at-least-equally-large robot population independently brained.

The Director of Research was Alvin Magdescu, dark of complexion and hair, with a little pointed beard and wearing nothing above the waist but the breastband that fashion dictated. Andrew himself was well covered in the older fashion of several decades back.

Magdescu offered his hand to his visitor. "I know you, of course, and I'm rather pleased to see you. You're our most notorious product and it's a pity old Smythe-Robertson was so set against you. We could have done a great deal with you."

"You still can," said Andrew.

"No, I don't think so. We've past the time. We've had robots on Earth for over a century, but that's changing. It will be back to space with them, and those that stay here won't be brained."

"But there remains myself, and I stay on Earth."

"True, but there doesn't seem to be much of the robot about you. What new request have you?"

"To be still less a robot. Since I am so far organic, I wish an organic source of energy. I have here the plans . . ."

Magdescu did not hasten through them. He might have intended to at first, but he stiffened and grew intent. At one point, he said, "This is remarkably ingenious. Who thought of all this?"

"I did," Andrew replied.

Magdescu looked up at him sharply, then said, "It would amount to a major overhaul of your body, and an experimental one, since such a thing has never been attempted before. I advise against it. Remain as you are."

Andrew's face had limited means of expression, but impatience showed plainly in his voice. "Dr. Magdescu, you miss the entire point. You have no choice but to accede to my request. If such devices can be built into my body, they can be built into human bodies as well. The tendency to lengthen human life by prosthetic devices has already been remarked on. There are no devices better than the ones I have designed or am designing.

"As it happens, I control the patents by way of the

firm of Feingold and Martin. We are quite capable of going into business for ourselves and of developing the kind of prosthetic devices that may end by producing human beings with many of the properties of robots. Your own business will then suffer.

"If, however, you operate on me now and agree to do so under similar circumstances in the future, you will receive permission to make use of the patents and control the technology of both robots and of the prosthetization of human beings. The initial leasing will not be granted, of course, until after the first operation is completed successfully, and after enough time has passed to demonstrate that it is indeed successful."

Andrew felt scarcely any First Law inhibition to the stern conditions he was setting a human being. He was learning to reason that what seemed like cruelty might, in the long run, be kindness.

Magdescu was stunned. "I'm not the one to decide something like this. That's a corporate decision that would take time."

"I can wait a reasonable time," said Andrew, "but only a reasonable time." And he thought with satisfaction that Paul himself could not have done it better.

16

It took only a reasonable time, and the operation was a success.

"I was very much against the operation, Andrew," Magdescu said, "but not for the reasons you might think. I was not in the least against the experiment, if it had been on someone else. I hated risking *your* positronic brain. Now that you have the positronic pathways interacting with simulated nerve pathways, it might have been difficult to rescue the brain intact if the body had gone bad."

"I had every faith in the skill of the staff at U.S. Robots," said Andrew. "And I can eat now."

"Well, you can sip olive oil. It will mean occasional cleanings of the combustion chamber, as we have ex-

plained to you. Rather an uncomfortable touch, I should think."

"Perhaps, if I did not expect to go further. Self-cleaning is not impossible. In fact, I am working on a device that will deal with solid food that may be expected to contain incombustible fractions—indigestible matter, so to speak, that will have to be discarded."

"You would then have to develop an anus."

"Or the equivalent."

"What else, Andrew . . .?"

"Everything else."

"Genitalia, too."

"Insofar as they will fit my plans. My body is a canvas on which I intend to draw . . ."

Magdescu waited for the sentence to be completed, and when it seemed that it would not be, he completed it himself. "A man?"

"We shall see," Andrew said.

"That's a puny ambition, Andrew. You're better than a man. You've gone downhill from the moment you opted to become organic."

"My brain has not suffered."

"No, it hasn't. I'll grant you that. But, Andrew, the whole new breakthrough in prosthetic devices made possible by your patents is being marketed under your name. You're recognized as the inventor and you're being honored for it—as you should be. Why play further games with your body?"

Andrew did not answer.

The honors came. He accepted membership in several learned societies, including one that was devoted to the new science he had established—the one he had called robobiology but which had come to be termed prosthetology. On the one hundred and fiftieth anniversary of his construction, a testimonial dinner was given in his honor at U.S. Robots. If Andrew saw an irony in this, he kept it to himself.

Alvin Magdescu came out of retirement to chair the dinner. He was himself ninety-four years old and was alive because he, too, had prosthetized devices that,

among other things, fulfilled the function of liver and kidneys. The dinner reached its climax when Magdescu, after a short and emotional talk, raised his glass to toast The Sesquicentennial Robot.

Andrew had had the sinews of his face redesigned to the point where he could show a human range of emotions, but he sat through all the ceremonies solemnly passive. He did not like to be a Sesquicentennial Robot.

17

It was prosthetology that finally took Andrew off the Earth.

In the decades that followed the celebration of his sesquicentennial, the Moon had come to be a world more Earthlike than Earth in every respect but its gravitational pull; and in its underground cities there was a fairly dense population. Prosthetized devices there had to take the lesser gravity into account. Andrew spent five years on the Moon working with local prosthetologists to make the necessary adaptations. When not at his work, he wandered among the robot population, every one of which treated him with the robotic obsequiousness due a man.

He came back to an Earth that was humdrum and quiet in comparison, and visited the offices of Feingold and Martin to announce his return.

The current head of the firm, Simon DeLong, was surprised. "We had been told you were returning, Andrew"—he had almost said Mr. Martin—"but we were not expecting you till next week."

"I grew impatient," said Andrew, briskly. He was anxious to get to the point. "On the Moon, Simon, I was in charge of a research team of twenty human scientists. I gave orders that no one questioned. The Lunar robots deferred to me as they would to a human being. Why, then, am I not a human being?"

A wary look entered DeLong's eyes. "My dear Andrew, as you have just explained, you are treated as a

human being by both robots *and* human beings. You are, therefore, a human being *de facto.*"

"To be a human being *de facto* is not enough. I want not only to be treated as one, but to be legally identified as one. I want to be a human being *de jure.*"

"Now, that is another matter," DeLong said. "There we would run into human prejudice and into the undoubted fact that, however much you may be *like* a human being, you are *not* a human being."

"In what way not?" Andrew asked. "I have the shape of a human being and organs equivalent to those of a human being. My organs, in fact, are identical to some of those in a prosthetized human being. I have contributed artistically, literarily, and scientifically to human culture as much as any human being now alive. What more can one ask?"

"I myself would ask nothing more. The trouble is that it would take an act of the World Legislature to define you as a human being. Frankly, I wouldn't expect that to happen."

"To whom on the Legislature could I speak?"

"To the Chairman of the Science and Technology Committee, perhaps."

"Can you arrange a meeting?"

"But you scarcely need an intermediary. In your position, you can—"

"No. *You* arrange it." It didn't even occur to Andrew that he was giving a flat order to a human being. He had grown so accustomed to that on the Moon. "I want him to know that the firm of Feingold and Martin is backing me in this to the hilt."

"Well, now—"

"To the hilt, Simon. In one hundred and seventy-three years I have in one fashion or another contributed greatly to this firm. I have been under obligation to individual members of the firm in times past. I am not, now. It is rather the other way around now and I am calling in my debts."

"I will do what I can," DeLong said.

18

The Chairman of the Science and Technology Committee was from the East Asian region and was a woman. Her name was Chee Li-hsing and her transparent garments—obscuring what she wanted obscured only by their dazzle—made her look plastic-wrapped.

"I sympathize with your wish for full human rights," she said. "There have been times in history when segments of the human population fought for full human rights. What rights, however, can you possibly want that you do not have?"

"As simple a thing as my right to life," Andrew stated. "A robot can be dismantled at any time."

"A human being can be executed at any time."

"Execution can only follow due process of law. There is no trial needed for my dismantling. Only the word of a human being in authority is needed to end me. Besides . . . besides . . . " Andrew tried desperately to allow no sign of pleading, but his carefully designed tricks of human expression and tone of voice betrayed him here. "The truth is I want to be a man. I have wanted it through six generations of human beings."

Li-hsing looked up at him out of darkly sympathetic eyes. "The Legislature can pass a law declaring you one. They could pass a law declaring that a stone statue be defined as a man. Whether they will actually do so is, however, as likely in the first case as the second. Congresspeople are as human as the rest of the population and there is always that element of suspicion against robots."

"Even now?"

"Even now. We would all allow the fact that you have earned the prize of humanity, and yet there would remain the fear of setting an undesirable precedent."

"What precedent? I am the only free robot, the only one of my type, and there will never be another. You may consult U.S. Robots."

" 'Never' is a long word, Andrew—or, if you prefer, Mr. Martin—since I will gladly give you my personal accolade as man. You will find that most congresspeople will not be so willing to set the precedent, no matter how meaningless such a precedent might be. Mr. Martin, you have my sympathy, but I cannot tell you to hope. Indeed . . ."

She sat back and her forehead wrinkled. "Indeed, if the issue grows too heated, there might well arise a certain sentiment, both inside the Legislature and outside, for that dismantling you mentioned. Doing away with you could turn out to be the easiest way of resolving the dilemma. Consider that before deciding to push matters."

Andrew stood firm. "Will no one remember the technique of prosthetology, something that is almost entirely mine?"

"It may seem cruel, but they won't. Or if they do, it will be remembered against you. People will say you did it only for yourself. It will be said it was part of a campaign to roboticize human beings, or to humanify robots; and in either case evil and vicious. You have never been part of a political hate campaign, Mr. Martin; but I tell you that you would be the object of vilification of a kind neither you nor I would credit, and there would be people to believe it all. Mr. Martin, let your life be."

She rose, and next to Andrew's seated figure she seemed small and almost childlike.

"If I decide to fight for my humanity, will you be on my side?"

She thought, then replied, "I will be—insofar as I can be. If at any time such a stand would appear to threaten my political future, I might have to abandon you, since it is not an issue I feel to be at the very root of my beliefs. I am trying to be honest with you."

"Thank you, and I will ask no more. I intend to fight this through, whatever the consequences, and I will ask you for your help only for as long as you can give it."

19

It was not a direct fight. Feingold and Martin counseled patience and Andrew muttered, grimly, that he had an endless supply of that. Feingold and Martin then entered on a campaign to narrow and restrict the area of combat.

They instituted a lawsuit denying the obligation to pay debts to an individual with a prosthetic heart on the grounds that the possession of a robotic organ removed humanity, and with it the constitutional rights of human beings. They fought the matter skillfully and tenaciously, losing at every step but always in such a way that the decision was forced to be as broad as possible, and then carrying it by way of appeals to the World Court.

It took years, and millions of dollars.

When the final decision was handed down, DeLong held what amounted to a victory celebration over the legal loss. Andrew was, of course, present in the company offices on the occasion.

"We've done two things, Andrew," said DeLong, "both of which are good. First of all, we have established the fact that no number of artificial parts in the human body causes it to cease being a human body. Secondly, we have engaged public opinion in the question in such a way as to put it fiercely on the side of a broad interpretation of humanity, since there is not a human being in existence who does not hope for prosthetics if they will keep him alive."

"And do you think the Legislature will now grant me my humanity?" Andrew asked.

DeLong looked faintly uncomfortable. "As to that, I cannot be optimistic. There remains the one organ which the World Court has used as the criterion of humanity. Human beings have an organic cellular brain and robots have a platinum-iridium positronic brain if they have one at all—and you certainly have a positronic brain. No, Andrew, don't get that look in your eye. We lack the knowledge to duplicate the work of a cellular brain

in artificial structures close enough to the organic type as to allow it to fall within the court's decision. Not even you could do it."

"What should we do, then?"

"Make the attempt, of course. Congresswoman Li-hsing will be on our side and a growing number of other congresspeople. The President will undoubtedly go along with a majority of the Legislature in this matter."

"Do we have a majority?"

"No. Far from it. But we might get one if the public will allow its desire for a broad interpretation of humanity to extend to you. A small chance, I admit; but if you do not wish to give up, we must gamble for it."

"I do not wish to give up."

20

Congresswoman Li-hsing was considerably older than she had been when Andrew had first met her. Her transparent garments were long gone. Her hair was now close-cropped and her coverings were tubular. Yet still Andrew clung, as closely as he could within the limits of reasonable taste, to the style of clothing that had prevailed when he had first adopted clothing more than a century before.

"We've gone as far as we can, Andrew," Li-hsing admitted. "We'll try once more after recess, but, to be honest, defeat is certain and then the whole thing will have to be given up. All my most recent efforts have only earned me certain defeat in the coming congressional campaign."

"I know," said Andrew, "and it distresses me. You said once you would abandon me if it came to that. Why have you not done so?"

"One can change one's mind, you know. Somehow, abandoning you became a higher price than I cared to pay for just one more term. As it is, I've been in the Legislature for over a quarter of a century. It's enough."

"Is there no way we can change minds, Chee?"

"We've changed all that are amenable to reason. The

rest—the majority—cannot be moved from their emotional antipathies."

"Emotional antipathy is not a valid reason for voting one way or the other."

"I know that, Andrew, but they don't advance emotional antipathy as their reason."

"It all comes down to the brain, then," Andrew said cautiously. "But must we leave it at the level of cells versus positrons? Is there no way of forcing a functional definition? Must we say that a brain is made of this or that? May we not say that a brain is something—anything—capable of a certain level of thought?"

"Won't work," said Li-hsing. "Your brain is man-made, the human brain is not. Your brain is constructed, theirs developed. To any human being who is intent on keeping up the barrier between himself and a robot, those differences are a steel wall a mile high and a mile thick."

"If we could get at the source of their antipathy, the very source—"

"After all your years," Li-hsing said, sadly, "you are still trying to reason out the human being. Poor Andrew, don't be angry, but it's the robot in you that drives you in that direction."

"I don't know," said Andrew. "If I could bring myself . . ."

1 [Reprise]

If he could bring himself . . .

He had known for a long time it might come to that, and in the end he was at the surgeon's. He had found one, skillful enough for the job at hand—which meant a surgeon-robot, for no human surgeon could be trusted in this connection, either in ability or in intention.

The surgeon could not have performed the operation on a human being, so Andrew, after putting off the moment of decision with a sad line of questioning that reflected the turmoil within himself, had put First Law to one side by saying "I, too, am a robot."

He then said, as firmly as he had learned to form the words even at human beings over these past decades, "I *order* you to carry through the operation on me."

In the absence of the First Law, an order so firmly given from one who looked so much like a man activated the Second Law sufficiently to carry the day.

21

Andrew's feeling of weakness was, he was sure, quite imaginary. He had recovered from the operation. Nevertheless, he leaned, as unobtrusively as he could manage, against the wall. It would be entirely too revealing to sit.

Li-hsing said, "The final vote will come this week, Andrew. I've been able to delay it no longer, and we must lose. And that will be it, Andrew."

"I am grateful for your skill at delay. It gave me the time I needed, and I took the gamble I had to."

"What gamble is this?" Li-hsing asked with open concern.

"I couldn't tell you, or even the people at Feingold and Martin. I was sure I would be stopped. See here, if it is the brain that is at issue, isn't the greatest difference of all the matter of immortality. Who really cares what a brain looks like or is built of or how it was formed. What matters is that human brain cells die, *must* die. Even if every other organ in the body is maintained or replaced, the brain cells, which cannot be replaced without changing and therefore killing the personality, must eventually die.

"My own positronic pathways have lasted nearly two centuries without perceptible change, and can last for centuries more. Isn't *that* the fundamental barrier: human beings can tolerate an immortal robot, for it doesn't matter how long a machine lasts, but they cannot tolerate an immortal human being since their own mortality is endurable only so long as it is universal. And for that reason they won't make me a human being."

"What is it you're leading up to, Andrew?" Li-hsing asked.

"I have removed that problem. Decades ago, my positronic brain was connected to organic nerves. Now, one last operation has arranged that connection in such a way that slowly—quite slowly—the potential is being drained from my pathways."

Li-hsing's finely wrinkled face showed no expression for a moment. Then her lips tightened. "Do you mean you've arranged to die, Andrew? You can't have. That violates the Third Law."

"No," said Andrew, "I have chosen between the death of my body and the death of my aspirations and desires. To have let my body live at the cost of the greater death is what would have violated the Third Law."

Li-hsing seized his arm as though she were about to shake him. She stopped herself. "Andrew, it won't work! Change it back."

"It can't be done. Too much damage was done. I have a year to live—more or less. I will last through the two hundredth anniversary of my construction. I was weak enough to arrange that."

"How can it be worth it? Andrew, you're a fool."

"If it brings me humanity, that will be worth it. If it doesn't, it will bring an end to striving and that will be worth it, too."

Then Li-hsing did something that astonished herself. Quietly, she began to weep.

22

It was odd how that last deed caught the imagination of the world. All that Andrew had done before had not swayed them. But he had finally accepted even death to be human, and the sacrifice was too great to be rejected.

The final ceremony was timed, quite deliberately for the two-hundredth anniversary. The World President was to sign the act and make the people's will law. The ceremony would be visible on a global network and

would be beamed to the Lunar state and even to the Martian colony.

Andrew was in a wheelchair. He could still walk, but only shakily.

With mankind watching, the World President said, "Fifty years ago, you were declared The Sesquicentennial Robot, Andrew." After a pause, and in a more solemn tone, he continued, "Today we declare you The Bicentennial Man, Mr. Martin."

And Andrew, smiling, held out his hand to shake that of the President.

23

Andrew's thoughts were slowly fading as he lay in bed. Desperately he seized at them. *Man! He was a man!* He wanted that to be his last thought. He wanted to dissolve—die—with that.

He opened his eyes one more time and for one last time recognized Li-hsing, waiting solemnly. Others were there, but they were only shadows, unrecognizable shadows. Only Li-hsing stood out against the deepening gray.

Slowly, inchingly, he held out his hand to her and very dimly and faintly felt her take it.

She was fading in his eyes as the last of his thoughts trickled away. But before she faded completely, one final fugitive thought came to him and rested for a moment on his mind before everything stopped.

"Little Miss," he whispered, too low to be heard. ☆

TINDAR-B

Patrick G. Conner

1

Alone in its private cubic centimeter of space, a single atom of hydrogen spun merrily to itself. Suddenly there was a pull—an irresistible tug—and it was plucked from between the stars. Faster than the electron could orbit the nucleus, it was melded together with uncountable billions of other captive atoms, rushing at relativistic speed toward the center of the scoop five hundred miles away. Soon they were in an area so crammed with hydrogen that the only possible course of action was to merge. By the time the congealing mass of energy-rich elementals was at the neck of the fusor, there was little left to be done. Another split second, and the heart of the ram-scoop digested the hotter-than-hot fuel. The starship *Plantation* was decelerated another inch per hour from its top speed of point nine nine nine *ad infinitum* the speed of light.

Eventually, a medium-sized G9-V star laid exploratory tendrils of gravity upon the hull.

The pilot, maintaining the highest speed practical under the circumstances, maneuvered into a slingshot orbit around the inner planet of the system. At the perigee he had the computer release a number of clamps and fire a small chemical rocket motor on one of his cylindrical cargo bundles, a glider, dropping it toward the surface. As it safely entered the prearranged glide path, he gave a short sigh and returned his attention to avoiding the

larger patches of interplanetary muck so that the ramscoop would remain at top efficiency for the next leg of its journey.

Once he was back out into clear space, the captain returned the controls to automatic, settled down in his cryogenic couch, and let his mind start the next few months of slow-dream.

2

There was the battering sound of cutting through the stratosphere. Ionized gases flowed green around the tiny viewport. Heat built up as the force of entry blasted away the thin layer of ceramic coating. Then came a rumble and shake as fins unfolded to give a minimal degree of maneuverability, and the smell of electricity running through insulation long unused became noticeable. Excitement mixed with apprehension as the five members of the Observation team viewed a planet forgotten by mankind for a thousand years.

"So green," murmured Sif Wilburn, weapons expert for the group.

"Yes. All green, it looks like," geologist Byron Dean agreed with a thick tongue. Their bodies were not quite used to the idea of being useful again.

"No seas?" Sif asked anyone who would answer.

The jolt of an air pocket made them all grunt.

"It must be a very old planet," said Sutton Landry as he adjusted the drag factor. He was unit leader, master ecologist, and currently pilot of fourteen tons of falling metal. "I would guess that after its age of seismic disturbances passed, erosion elements nearly leveled the surface. Now the land rests on an extremely high water table, with plants that have developed long enough roots to tap the underground supply. So no seas and all green. Sound reasonable, Byron?"

"Sure. But ask Audrey about the plants."

"Well, Audrey?"

"I don't see why not. It certainly would be hard on animals, though. I doubt if there is much mobile life

aboveground, and probably only a little more underneath: gopher equivalents, burrowing insects—maybe a few fish in subterranean lakes."

"Are you speaking as a xenobiologist or as an empath, Miss Brown?" The question came from the back of the ship, from the odd seat in the five-seat configuration.

"As a plain, ordinary biologist, Mister Gallatin."

She tried to make her voice sound unemotional, but contempt seeped in anyway. Jean Gallatin—that is, *Mister* Gallatin—was the Observation team's observer. To him that meant keeping a proper distance between himself and the other members of the team. To the others his attitude was patently rude.

"Either way, we'll find out soon enough," Sutton told them. "We're down to landing speed. Since one spot seems as good as another, I'll just set her down up ahead."

Byron looked relieved. "The quicker the better. I was beginning to wonder how long this piece of junk could stay in the air. It's shimmying like a belly dancer."

Sutton smiled. "Don't worry. It will last until we get on the ground, and that's all we need. We'll be picked up first-class by the *Harvester*."

"If we are here at the time, Mister Landry. Only if we are here at the time. We must not start the expedition too optimistically. After all, there are four drop ships for every pickup ship, and the return flight is never crowded."

The others turned around and glared at their own personal fount of joy. He looked back with all the emotion of an undertaker's practice dummy. Audrey was about to make an appropriate comment, but Sutton beat her to the draw in the interests of peace.

"Check your harnesses, everyone, and no more talking. I need all eyes on the viewport to help me check the terrain. Look sharp now! We get just one chance at this."

Personal differences were instantly replaced by dutiful concentration.

Tension built rapidly as they skimmed the tops of the vegetation. Then they dropped below, into the mass of green. Tension turned into fear—they could not see the ground. But a moment later there was a long scrape, a few tiny bumps; and they came to rest.

Suddenly there was silence. At least they had made it to the surface alive.

"Prepare for hatch opening," Sutton said. His voice had not yet relaxed. With the slightest hesitation, he blew the bolts that sealed the large square doorway.

All breathing stopped involuntarily for a moment. Then five pairs of lungs took deliberate, deep breaths. Their real problem was that the *Harvester* could not afford to bring aboard anything that had been in contact with immediately fatal microorganisms. So if there was a deadly microbe, the planet would merely be written off in the galactic doomsday book. Along with the team.

"Seems okay," Byron ventured as he noticed his heart was still beating.

"So far so good, anyway." Audrey smiled wryly. "I'll get to work on a complete analysis as soon as we set up."

Sutton started unbuckling himself. "Let's get going. First, unload all the field instruments, then help Audrey with her equipment."

He stood up, hit the button that opened the aft cargo doors, and switched off the bank of fuel cells that was the glider's only power source.

The others were already at the hatch.

Sif was the first to step out onto the planet, her curly black hair and copper face contrasting pleasantly with the green of the tall reeds, her form-fitting multisuit turning an identical green for camouflage.

Byron followed closely. He was two hundred twenty pounds of hard muscle, trained like the rest in several martial arts, but far more comfortable in a lab with his rocks and mineral samples.

Next Audrey came bounding out, statuesque but rather awkward in spite of herself. She had large blue eyes, violently cropped blond hair, and was a walking contra-

diction between beauty and self-doubt. She was as nervous as Sif was calm, partly because of her extra talent.

Mr. Gallatin walked tall, slender, alone.

Sutton Landry was last. He stayed at the threshold for a while watching his crew take their first look at a world that would do its best to kill them. Fleetingly, he felt the old Major Landry resurface, making him remember the outfit he had commanded on Warenthrill-Two. But it was only a memory. He was glad he was here, now, doing a little something to make up for the lives he had taken. Let someone else fight the brush wars. The gray hair on his thirty-five-year-old, finely tuned body bore witness that he had done his share.

"To the cargo, everyone. The scene may look pretty, but it must be lethal somehow. Black-border planets are always lethal, somehow."

"Perhaps the sharp edges on these tall plants, Mister Landry. They certainly are keen enough to slice human tissue."

"But how are they going to kill anyone, Mister Gallatin?" Audrey fired at him. "Or do you think the old Star team just casually put their throats to the edges and sawed back and forth?"

"Maybe they have means, Miss Brown. Something telepathic, perhaps, draws animals to them."

"No way. There aren't enough animals on this whole planet to feed a square mile of these things, even if they were carnivorous."

"Are you speaking as—"

"As an averagely observant human being. Listen. Look around you. There hasn't been a concentration of mobile creatures here for a thousand years."

"Is that a precise estimate, Miss Brown? If so, the something that destroyed the old Star team might be gone by now."

She shook her head in exasperation, not knowing what to say to that steely façade he threw up against the world. His psyche stunk—that had been plain from the first—but the emanations around him now were unbearable.

"Mr. Gallatin, it is as precise as I can be, given the fact that I know absolutely nothing about this planet other than what I can see and hear. If you want me to give you a more accurate report, I suggest you shut your ungainly mouth and let me get my equipment unloaded."

Obviously, from the workings of his forehead, Gallatin was about to take offense. This time Sif played the role of peacemaker.

"Come, Mister Gallatin. After we get Audrey's things out, I'll let you help me set up shop. All those heavy components are too much for just me." She hooked her arm around his.

Even the observer knew what she was doing, but Sif had a certain persuasive way about her.

"Very well, Miss Wilburn. Although I believe you are quite capable of doing your own work, I will assist you. It will give me an opportunity to observe how a spectral weapons engineer prepares to combat the unknown. Please lead on."

They went aft.

Byron and Audrey stood, disgusted, together for a minute. "I thought an observer was supposed to tell us how to do our jobs better, not learn from us," he said

"Both, unfortunately. Back at the academy they have an idea that the four specialized members of a team need someone to bring their heads out of the clouds now and then by asking questions. Looks good on paper, but here . . ."

Byron nodded. Here Gallatin was going to be worse than a swarm of mosquitoes.

Sutton came up and put a hand on each of their shoulders. "I hate to bring this up, but the cargo—remember? Right now Gallatin is doing us more good than you are."

They turned around.

"Sorry, Sutton," Audrey apologized. "It's just that he gets to me. Especially now that we've landed. I promise I'll do better." She gave the pilot a peck on the cheek and ran off.

The right side of the geologist's mouth smiled. "What a way to run an exploration." Then he, too, loped off, leaving Sutton there to ponder where things had gone wrong.

3

Night found the unit leader poring over some old papers in his sleeping quarters. His weather-monitoring equipment was functioning now, but it was completely automated. He would have nothing to do with it until morning, when it would show some preliminary results. So he was trying for the hundredth time to unlock the secret of the planet by sifting the ancient Star Log records.

A knock sounded on the door.

"Come."

It was Sif. "Hi. Am I interrupting anything?"

Sutton snorted. "Unfortunately, no. I was just studying the Star team's log again. It frustrates the hell out of me, but I can't seem to put it down. Somehow I know the answer is in those four lines."

She quoted the entry by heart: " 'Tindar-B.' Then there's an illegible smear, a watermark. Then the star-catalog number, and the Rossen coordinates. 'First team dropped on,' then a watermark, 'by the *Johnny Appleseed*. Rendezvous 3462.11.6.' Large watermark, then 'from orbit. Ghastly. No survivors.' "

"If we only had the original instead of a three-hundred-year-old copy of a seven-hundred-year-old moisture-damaged copy." He slammed the book shut. "Damn! Why didn't they use microfilm? Who decided these reports were too sensitive to be reproduced? Today all we know for sure is that the Admiralty decided this planet was deadly enough for a black border in the galactic atlas." He paused, tried to shove it to the back of his mind, made an effort at a smile. "Sorry, Sif. What was it you wanted?"

"Some exercise. I finished a standard wide-spectrum defensive line around the ship, so I have nothing more

to do until we find an enemy. I'd go out hunting, but Audrey says there's nothing to hunt."

"So I understand. Well, I'm game. I'm tired, but I doubt if I'll be sleepy until Audrey gets done with her detailed analysis."

"Me, too." She remained silent for a moment. Then a gleam twinkled her eye. "My room or yours?"

"Here is fine with me," Sutton offered. "Just be careful of the desk."

Sif nodded, put her hands on his shoulders. He did the same to her, and they began.

Sutton got the first fall. He put his weight to advantage whenever they were using the wrestling mode.

Sif got up, took a kendo posture. He matched it. After a series of technical maims and kills, Sutton suggested they practice some isometric holds, a relatively new tactic used against considerably larger opponents—like grizzly bears.

They were holding in one of the more complicated positions when Audrey walked in. She never knocked.

"I just finished the tests, Sutton, and I"—she took her eyes off the papers in her hand, noticed he was not alone—"thought you'd like to know the results. But I'll leave you two alone." She started to go away.

"No, no!" Sutton called after her. "Come on in. Sif and I were just getting some exercise."

"So I see."

The two combatants on the floor untangled themselves and ambled over to her.

"What did you find?" Sif asked with interest.

Audrey gave her a look. "Nothing. Absolutely nothing. Not a single living thing on the whole surface of this planet, with the exception of those plants. And they're incapable of producing anything that would even vaguely harm a human being."

"Not even microorganisms?" Sutton wondered.

"Not even microorganisms."

"Then why do you look so perturbed?" he asked.

She frowned even more deeply. "Among other things,

I can't believe it. Now I'm talking as an empath rather than a biologist, so you don't have to ask."

"Don't be so defensive. Gallatin's not around," Sutton said gently. "But getting back to the subject, what are those 'other things' you mentioned?"

Audrey glared at him. Then she shook her head violently. "Oooh! If you could only *feel* yourself sometimes!" With that she turned on her heel, stomped down the corridor to her own room, slammed the door.

"What did I say?" Sutton asked Sif, bewildered.

She gave him a sly little smile. "You forget that she's a female empath, Sutton."

"No, I don't, I—"

"A *female* empath."

It sunk in, finally. "Oh. But I wasn't— Oh!"

"Right. You weren't. 'Night, Sutton."

He nodded, and she left silently.

4

By the third day they were all ready to burn the ship, throw away their clothes, and become Trappist monks. Even Sif and Audrey. No one had found the slightest trace of anything more threatening than some thunderheads in the distance.

"The damn toilet's stopped working!" Audrey yelled as she came in late to the meeting. "What are we going to do about the blasted toilet, that's what I want to know!"

"Relax, Audrey," Sutton told her. "We'll get Sif to extend the defense and set up an outside trench."

"That's fine for *you* to say! What about us women? It's not the same thing, you know. Not the same at all!"

"Calm yourself," Sif said, handing her a glass of reconstituted milk. "I'll build us a privy; I've certainly got the time."

Sif's promise seemed to placate Audrey enough to make her shut up and sit down in one of the foldout chairs that let Sutton's workroom double as a conference chamber.

But Byron had worries, too. "Audrey's brought up an important point. A lot of things in the ship are failing, including some of my instruments. So far I've had enough backup equipment to get by, but what if this situation keeps on?"

Jean Gallatin took it upon himself to answer. "The failure of certain components of our ordnance was expected. So all essential equipment was duplicated. You must realize, sir, that we were in the void of space an extremely long time."

Audrey had hate in her eyes, but Byron kept the floor. "That's not entirely true. Certain heavier items—essential items—were not duplicated. For instance, if my Kleindest hydrocarbon analyzer is overloaded, I have neither a replacement nor the parts to fix it. Then I'm back to chemical analysis, which just isn't sufficient for our purposes."

Sif, also, was showing signs of anxiety. "That sounds serious, Byron, but I just had another thought. How is the signal beacon, Sutton? Will it still be functioning by the time the *Harvester* arrives?"

"Should be, as long as we reset it every day. Supposedly, it's indestructible. But the way things are going . . . I really don't know."

Suddenly even Gallatin became concerned. "Certainly, Mr. Landry, you should know. If it is not operating, the *Harvester* will assume we are dead and not bother slowing down to check. Then Tindar will be prohibited for the rest of time."

"Not to mention our being left here for the rest of our lives," Sutton agreed dustily. "But the fact remains, we are on a high-risk assignment and will have to take our chances. And this planet is Tindar-B, not just Tindar. Tindar is the sun." Giving the observer a slight taste of his own medicine pleased Sutton, even if it was a petty thing to do. His nerves were stretched as taut as those of the rest of them.

He went on. "As for your specific problem, Byron, I can only sympathize. Some of my field equipment is dying off, too. I'm down to eighteen drones, and that's

cutting it pretty thin. But I'm afraid we'll have to do the best we can with what we've got. I wish I could guarantee that will be enough."

A frustrated silence followed. Everyone wanted someone to be able to fix things, make them work, give them at least a chance to survive. But no magician was included on the team's roster. They had only themselves.

Sutton sighed. He would have liked to turn them onto a more cheerful topic. The progress reports had to be completed, though, even if they were as depressing as the looks on the faces of his crew members. He chose Audrey to start off the reports. She had been quiet much too long for her.

"Audrey, old girl, tell us your news. Did you find anything exciting in the soil samples Sif got for you?"

The biologist shrugged, shook her head, sat there looking dejected.

He waited, but nothing was forthcoming. "Nothing again?" he prompted.

"Nothing organic. And the worst part is, I know I'm wrong. But I don't know how."

"Byron? You have something for us?"

"Only negative information." He picked a discarded piece of metal off the floor and started flexing it. "There has been no seismic activity to speak of, no sign of land upheaval, no trace of violent changes for the last half million years. It's as stable a planet, geologically, as you would ever hope to find. The only even halfway interesting things around here are those rough brown rocks lying on the surface. They've survived erosion that has completely ground down the rest of the planet. Whatever they're made of—and I've just started analyzing them —would be a hell of an insulating material. The commercial possibilities are endless."

The piece of metal broke. Byron tossed it toward the waste container. "And that's it for me. The only problem I've run into besides that gooey white stuff the plants secrete is equipment failure. What about you, Sutton? What kind of meteorological picture are you getting?"

"Not very surprising. Mild fluctuations of—"

"Wait a minute," Audrey broke in. "What was that about plant sap?"

Byron was annoyed. "You know. The sticky substance that has spread all over the ground since we landed. I don't know if it's sap or not, but whatever you call it, the goo must come from those reeds we snapped off."

Audrey's eyes widened. "Byron, it didn't come from the reeds. I checked that out first thing when I noticed it. I wrote it off as some semi-solid compound in solution, produced by the high water table."

"Couldn't be," Byron insisted. "The stuff has too complex a chain of molecules suffused through it. But I only did a preliminary, thinking it was in your field."

The air had turned electric. "Well, then," the observer observed. "This may be the very thing we have been looking for. I suggest Miss Brown and Mister Dean reevaluate their findings and report back immediately." He got up to go.

Audrey stood up and stepped within a foot of his nose. "Sit down, shut up, keep down, and stay quiet." Her voice was like liquid oxygen: cold and dangerous. Gallatin sat. "Now let Sutton and Sif tell us what they have found out. We missed one thing from lack of communications; we can't afford to miss another."

"You're right, Audrey, but settle down. What I was going to say probably isn't very important. The weather is as stable as the geological setup, with only mild variations of moisture content, temperature, and atmospheric pressure. There are land features enough to keep the wind within reason. Currently we're in the middle of a growing low, with humidity falling. Not anything of significance."

The group seemed to agree. "Your turn, Sif," Sutton said. "Any thoughts to share with us?"

"Surprisingly, yes. One. I've been going over the Star Log entry as you have, mostly just to have something to do. Then last night it struck me. How many planets does Tindar have?"

The unit leader frowned. "Five major ones. All too

cold, except this one. What does that have to do with anything?"

"Have there ever been more?"

"No, definitely not. There would be traces."

"Then why is this planet designated *B*? It's the first planet, not the second. And why a letter instead of a number? Aren't uninhabited planets always designated by a number?"

"You have something there." Sutton nodded. "I don't know what, but it could be important."

"Perhaps the clerk who copied the copy of the report made a slight error," Gallatin said, forgetting Audrey's earlier injunction. "Let us not go off onto a tangent when we have a major breakthrough to attend to."

The biologist lunged out of her chair yelling a cry of wordless hatred.

Sif reacted first and threw herself around the woman in one of the isometrics she and Sutton had been practicing. Audrey struggled for a while, cursing the ancestry of the Admiralty and observers in general and Gallatin in particular, but she finally calmed down. Sif relaxed her hold, let her loose.

Audrey got up. "I'm sorry," she apologized, although her nostrils were still dilated with loathing. "I'm sorry, but I can't stand being on the same planet with this—this—this *thing*. I try to control myself, but I can't. Even when I can't see him I can feel his emanations. They're all around me, all the time, and I have had it. Had it! Keep him away from me or I'll kill him, I swear." She ran out of the room.

Byron felt embarrassed, and began to leave also. "I guess I'll get back to work. Lots to be done," he mumbled on his way out.

Gallatin followed him down the corridor in the direction opposite to that Audrey had taken, obviously at pains to do as she had asked.

"I don't understand," Sutton told Sif. "I didn't think empaths could get that mad at anyone. Thought they could pick up enough positive vibes in a person to counteract his bad side."

"You're right. At least that's what I thought, too."

"Then something strange is going on. That makes three leads we've uncovered."

"Maybe only two. Gallatin might be right in saying the mistake in the log is insignificant."

"Could be he's wrong. Stay on it. In the meantime, I'm going to see what's with Audrey."

Sif hid a smile in her eyes. "Yes, she might be in need of some comforting."

Sutton looked offended, then went off after the biologist.

5

She was crying as she worked when Sutton came in.

He began to give her a soft word, but she started talking through her tears. "I don't know how I can make it, Sutton. My nerves are shot, my head rings, I can't sleep. My stomach's been so upset, the only thing I can hold down is milk. Sometimes I hear mute voices."

She dropped the slide she had been preparing. She closed her eyes as it broke on the floor, then opened them and stared down at the shards as if she had just killed a favorite nephew. "Oh, Sutton! What am I going to do?" She looked like a little waif who had been left out in the rain.

Sutton could only hold out his arms. Audrey fell into them and cried long and deep. He kissed the top of her head from time to time for solace, telling her that things would be all right. It was as if he were shielding her from the blast of a storm.

When she finally calmed down, she unfolded herself from him. She wanted his arms about her, but not simply for comfort.

"Well, Sutton, here I am making a fool of myself again. I'd apologize, but I'm beginning to sound like a loop of tape. I think I'll save the next 'I'm sorry' for when I tear out Gallatin's throat."

That brought Sutton back to the other purpose of his visit. "Sif and I were talking, Audrey. We were both of

the opinion that empaths weren't capable of such violent loathing."

She snorted. "Yes, usually it's impossible. The human condition is too full of pathos for those of us who can feel. But occasionally a person comes along whose psyche is so ugly that it sends out waves—oceans—of scrambled, degrading, stinking, maddening aggravation. It drives us up the walls."

"Us? You mean all empaths?"

"Sure. Someone as twisted as Gallatin would be visible a hundred miles away to anyone who could *'see'* in the psychic range. Why?"

"There are empaths on the Admiralty selection staff, aren't there?"

"Of course. Teams couldn't be picked with optimum efficiency without," her voice trailed off, "someone to make sure they were compatible . . ." She nodded. "I see. Then this can't be happening."

"But it is happening. The answer just isn't as simple as it seems. Think hard, Audrey! What, in your knowledge, could be causing you to over-read Gallatin?"

She creased her forehead. "Theoretically, only another empathetic being—one with true telepathic powers. So far, the closest we've come to one is the sentient plant creatures of Tyrene, and they could only shade feelings. A million of them on exactly the same wavelength would be necessary to do what something has done to me here. And as far as we know, no living organism can concentrate that fully for any length of time. So that pretty much leaves me with a blank."

"No living organism," he repeated. "No living organism. That's it! The sap you and Byron couldn't classify. It must be alive somehow. Maybe not in the usual way, but alive enough to manipulate you. That has to be it!"

Audrey was skeptical, but now she felt she could not trust herself. "I suppose you're right. In that case, I'll go get Byron and we can work on it together. We should be able to crack the puzzle in a few hours with all these clues."

"Okay, but *I'll* go get Byron. Gallatin's with him, and

I don't want to have to sit on top of you to calm you down."

That elicited a giggle from her, for some reason. "Don't worry. Now that I know he's not the one doing it, I can keep myself in line."

Sutton nodded, but he was curious as to why she giggled, and it showed on his face.

Audrey obliged him with an answer of sorts. "Honestly, Sutton. You don't know *what* you want." Then she giggled again. "But thanks for coming to see me. I feel infinitely better." She chuckled and went after Byron.

6

Two days later they were all outside: Sif checking the perimeter, Byron collecting samples, Sutton retrieving one of his weather drones, Audrey trying to talk to the plants—normal enough for an empath—and Gallatin getting in everybody's way. Contrary to Audrey's prediction, they had not yet solved the mystery. The unidentified substance had been identified and discarded as the culprit. It was an oddly arranged mixture of hydrocarbons and some rather esoteric molecular chains, but it was definitely not alive in any sense of the word. Its closest Earth equivalent was paraffin, and wax is not generally known for its ability to communicate. On the other hand, the crew was still not certain where the substance was coming from. For that reason Byron and Audrey were still centering their investigations on it.

Sutton walked back toward the ship, stopping to talk with Audrey on the way.

"Overhear any interesting gossip?" he asked, inclining his head to indicate the reeds swaying in the breeze.

"Actually, I do this more to get out of the ship than anything," she admitted. "It gets hot and stuffy during the middle of the day with the pitiful air-conditioning we've got."

"I'd step it up for you, Audrey, but some interesting things are going on in the atmosphere and I want to keep on top of them. The weather is the only thing an

ecologist has to work on here, yet that seems to be complex enough for me."

"Oh?"

"Yes. Remember that low-pressure system I mentioned at the meeting? It has grown to cover a third of the planet and is still increasing in scope. That's what has been bringing the temperature up. There's also been a huge drop in humidity since we landed."

"I had noticed the dryness. It's even starting to turn these reeds brown, despite the high water table."

"There's more. Usually a planet's meteorological picture is a balance of highs and lows, created and changed by certain standard variables—like the action of the sun on an ocean, or cold currents of water meeting warm ones. The same basic laws apply everywhere, once you've adjusted for differences in gravity, atmosphere, solar activity, and that sort of thing.

"Except here. Here a gigantic low is forming for no apparent reason—a low of such proportions that the rest of the planet should be having tremendous weather. But it's not. There's not even a corresponding high being built up. In other words, a hell of a lot of air is going someplace, but I don't know where."

Audrey was impressed. "I'm positive that's significant, although I'm not sure what to make of it."

"Me neither, and that's why—"

At that moment Byron ran past them, headed toward the hatch with a full specimen bag nestled in his hands.

"Anything wrong?" Sutton yelled after him, instantly prepared for a crisis.

"No, I'm fine!" the geologist shouted back with a wide grin as he disappeared into the ship.

Audrey and Sutton exchanged glances. This was not like their quiet denizen of the deep laboratories.

Sif came up on them in the meantime. "What's with Byron?" she asked tensely.

"We don't know," Sutton told her. "But it must have something to do with what he's got in that bag."

Gallatin arrived and asked the same question in different words.

"What do you mean, Mister Gallatin?" Audrey asked in a civil tone. "It looked as if you were working with Byron at the time."

"I was, in a manner of speaking," he admitted. "But Mister Dean is a rather quiet person. He simply stood staring at the ground for several minutes, ignoring my questions. Then he suddenly grabbed one of those large brown rocks, stuffed it in his bag, and ran off. I honestly do not know what excited him."

Sif frowned. "Strange. I thought he had already checked out those rocks."

"No, he dropped that when we started working together on the waxy substance."

At that point Byron stuck his head out of the hatch and yelled to them. "Audrey, come here. On the double!" He vanished again in the direction of his workroom.

She gave the others a shrug and went to see what he wanted. Naturally they followed her. Soon the entire company was gathered around the crowded table in the middle of Byron's lab. Pieces of rock were scattered around the room.

"Good. You all might as well be here for this. Especially Mister Gallatin; it will probably intensify Audrey's sensitivity." He did not wait for the questions to start. "Here, Audrey, sit down in the chair. Relax. Now clear your mind and close your eyes. Hold out your hands."

Gingerly, expectantly, the geologist put one of the larger pieces of rock in her outstretched palms. "Feel anything?"

There was a pause while her face squinted in concentration. "I don't know. Maybe. You have to realize that there is an immense amount of psychic noise on this planet."

Byron now took a sharp instrument from the table and carved a section out of the rock. Strangely, it yielded like pumice. "How about now?"

She nodded her blond locks. "Yes. Definitely yes. I'm tuning in on it. Yes."

"The same as you've been feeling these past days?"

"Definitely. But much stronger. I wasn't sure I felt anything from the rock a moment ago. Whatever you did to it intensified the action—yes, that's it—the psychic noise—" She opened her eyes. "Just a plain rock. I thought you must have found something inside, something alive."

"Neither inside, nor dead nor alive," Byron rhymed gleefully. "This is a totally new form, something we've never seen in the universe before. What seems like veins of polymorphic elements in the rocks are really differentiated organs—or cells, or something. We'll have to invent a name for them. In any event, they are capable of synthesizing matter."

"Then that white wax—" Sif said.

"Right: rock dung!"

"What got you on to it?" Sutton asked, still looking worried.

"This particular rock is apparently having problems. It's sick, maybe. There are very faint pink streaks in its dung; the light happened to be just right, and they caught my eye. I stood there for a while trying to figure out what they were, long enough to see them move a very small but noticeable distance."

"And then everything fit into place," Audrey said happily. "Didn't take you much time to check it out. Did you find what makes them telepathic?"

"Not yet, but I'll lay odds it has to do with certain crystalline structures. One thing for sure, it's triggered by injury. So we started the process when we landed."

"I am pleased to hear you have the problem solved, Mister Dean. That takes a great load off my mind. Now, if you would, please tell us what is dangerous about these semi-alive specimens. It cannot be their effluence, for you have said that it is practically inert."

Byron's face fell. He had not gone that far. His excitement was from the sheer joy of making a discovery, any discovery.

But Sutton took up the story. "I can answer that, I'm afraid. You would all have figured it out by now if you had considered it from an ecological standpoint. Item

one: no animals are on the surface of this planet even though there are resources for them. Item two: when a rock is injured, it contacts other rocks and they all start making paraffin. Item three: when that happens, the atmosphere thins somewhat and the moisture content of the air drops rapidly. No doubt these are the raw materials for the rocks, which are evidently extremely sophisticated molecule-benders. Item four: when the moisture level drops sufficiently, the reeds dry out. Item five: there is a great potential for lightning storms on the edge of the huge low-pressure system, which will probably be released when the rocks stop sucking in air."

"Item six," Sif finished for him: "when the lightning strikes, the reeds will catch fire. That will melt the wax, and then the reeds will act as wicks. The entire planet will turn into one monstrous candle." She gave an ironic snort. "That clerk made a little error, all right. The name of this death trap isn't Tindar-B. It's Tinderbox."

The unit leader agreed. "Now it all falls into place. And that large watermark on the log entry covers the pickup ship captain's description of what a planet on fire looks like from orbit."

"I'm surprised he didn't name it Hell," Audrey said with a shiver.

"Probably too much smoke," Byron speculated. "That wax, as you call it, has a lot of impurities in it."

Gallatin interrupted their trains of thought. "This all sounds logical on the surface, but two things do not make sense. Why should rocks want to set fire to a planet, and how can they think of such a plan in the first place?"

"Every viable creature is capable of self-protection," Audrey told him as quickly as she could, "and in some ways these entities are terribly vulnerable. They're practically untouched by erosion elements, but a species of clawed animals searching for food would damage their crunchy bodies beyond the point where they could function."

"That still does not explain how they can think to create an inferno."

An impatient frown creased Audrey's face. "Explain to me how the Venus-flytraps decided to start catching flies. No, Mister Gallatin, nature doesn't require most of its creations to consciously plan their defenses. Time takes care of that for them."

"And speaking of time, how much do you think we have, Sutton?" Sif asked.

"Let me think. That low can't grow too much more, so the action must be peaking. How long it will stay at a plateau level is hard to say, but probably not more than another week. I'd guess we'll have our firestorm within four to ten days—certainly within two weeks."

"Then we have no chance of avoiding it. We're toward the front of the pickup line, but the *Harvester* won't be here for two or three months."

Sutton nodded. With all the teams in potential danger, the ship could not alter its schedule even if a radio message reached it in time. They were on their own. "We have two ways of dealing with this thing: either contain it or try to survive through it."

"Or both," Sif threw in.

"Or both, although with so little time it might be best to concentrate our energies on one or the other. Anyway, we need more data to make a good decision. It may be that only unprotected animals and unsuspecting humans need worry. Perhaps the last expedition was simply caught unawares, with the entire crew outside collecting samples or something. Byron, how long will it take you to figure out the fire's probable life span and peak temperatures?"

"With you helping me, five or six hours. By dusk."

"Good. Audrey, you and Sif start concentrating on how to get rid of those reeds. If we can eliminate any part of the fire chain, we'll have it licked. Mister Gallatin, please take care of my drones. All you have to do is retrieve them when they land and feed their data into the Ecocomp."

"But I should be with one of—"

"Discussion closed. I hate to be authoritarian, but the battle has been joined. From now on, my orders may not be questioned. To your duties, sir."

Technically, an observer's prerogatives could not be abrogated by the unit leader. But Gallatin could not stand up to the steel in Sutton Landry's voice. He instinctively knew that an ex-major of the Counterinsurgency Forces made and enforced his own regulations. He went to collect the drones without another word.

"That should keep him out of our way for a few hours," Sutton said to the rest. "Let's get going."

"Is that an order, Captain?" Sif crooned.

Sutton turned his mouth down. "Hell, no! I know I can't order you renegades around. You'd slit my throat in the night."

"You're right," Audrey said as she started with Sif to the lab, giving him a little slap on the behind when she passed.

"You know, Audrey, we're going to have a long talk together when this is all over."

"Talk, talk, talk—that's all you ever do, Sutton."

He shot her a hard look, and she scurried out the door.

7

It was twilight when they met again. Tindar had set after a spectacular show, orange light dancing with the increasing dust in the air.

They had decided to hold the planning session in the relatively cool outdoors, and Byron was passing around coffee with an added stimulant. They knew they could not afford sleep until preparations for the crisis were complete.

They all wore grim faces: they had all found things they did not like. Sutton was looking down into his cup, forcing himself to keep still. Audrey was obviously again having trouble stifling the psychic noise. Gallatin kept taking long, deep breaths, to everyone's annoyance. Even Sif was fidgety.

"Let's get this over with in a hurry," Sutton growled. "Byron, you tell the women the good news."

"Right. Taking into consideration burning temperatures, inversion layers, decreasing oxygen supply, irradiation—in short, everything we could think of—we have a projection of a maximum temperature of around six-fifty Fahrenheit. Uncontrolled, in any one spot, it will be above two hundred for approximately twelve days, with the peak lasting at least seventy-two hours."

"That's the good news?" Sif wondered.

The unit leader stood up. "Uh-huh. The bad news is this: I miscalculated the amount of time we have to prepare. The last drone of the day picked up an active thunderstorm. The fire's already started. We'll hit two hundred here within three days."

The news was stunning. Audrey put a hand to her mouth as her stomach started doing flip-flops. It was time for a long, meditative silence, but Sutton pushed them on.

"I have some measures in mind that might get us out of here alive, but the whole thing is pretty rickety—lots of flaws. I'm hoping you two came up with some kind of way to eliminate the reeds. Sif?"

Impassively, she shook her head slowly. "No way, without setting fire to the reeds just beyond the target area. If it were a question of killing them rather than destroying them altogether, it would be easy. But they're dead already. And we simply cannot get rid of them." She closed her eyes. "I'm sorry, Sutton. This is what I'm here for, and I can't be of any help. I'm useless, a total failure."

"Get your head out of the ground, Wilburn," he said sharply. "You were billed as a weapons expert, not a gardener. Besides, none of us have been brilliant lately."

She pulled herself back together, nodded with a faint smile.

Sutton charged ahead. "All right. It comes down to this. We will have to weather the storm in the ship. That gives us two problems: heat dissipation and an oxygen reserve. The second should be relatively easy. We can

rig up a compressor, and Byron has calculated that we have enough containers around the ship to hold an ample supply of air for fourteen days—as long as we sleep through the firestorm. Audrey, you pick out a suitable drug and determine the correct dosage. Meanwhile, I'll fix up a repeater switch to reset the signal beacon daily."

"All right. But it seems it would be simpler to make a filter of some sort instead of using bottled air," Audrey said.

"No. By the time you handle combustion products, particulates, heat, and then make the output dense enough to breathe, you have a machine that's so complicated it may break down."

"But the ship's atmosphere regulator may break down anyway. We'd at least be awake to fix a filter."

"First," Sutton insisted, "the regulator is a fairly simple piece of equipment: not a lot could go wrong with it. Second, I doubt we could fix that filter of yours in time to do any good. Third, this way should take the least amount of time—and that is the main reason I chose it. Okay?"

"Okay," she answered.

"On to the heat exchanger. Too bad we can't just blast a pit with one of Sif's gadgets and bury the ship, but that would start a fire here immediately. What we *can* do, though, is clear an area around the ship and dig down to the water table. That will give us a large supply of coolant so that we can turn the air-conditioning into a refrigeration unit. We can also flood the ship except for the three innermost cabins, pumping the water quickly through to the outside again. If everything works as expected, the inside temperature won't go over a hundred at the peak.

"However, there are a few variables that we can't control or predict. The ship itself was not meant to take much heat after it made the atmospheric entry. It should be able to hold up with water cooling the inside, but that's not an absolute certainty. Also, we have to repair some equipment before we can use it to start making the pumps. I don't know how long that will take. I could go

on naming the flaws, but you get the idea. We have a better chance to succeed than the first team—how much better, I'm not sure. One thing, though: the odds decrease with every second we waste. Any questions before we get started?"

Sif asked the only one necessary. "Who does what?"

"Good." Sutton could see they were not going to give themselves time to worry about failure. "Audrey and Mister Gallatin will clear the brush for a hundred yards in each direction while Sif decides on the best means of getting at the water table. Byron and I will start working on the equipment." He looked warmly around the group. "Ladies and gentlemen, let us get our tails in gear."

8

Everyone enjoyed seeing Jean Gallatin on the working end of a shovel. Even Audrey, who was sweating alongside him, had a little grin on her face. It was perhaps a bit sadistic to take pleasure in his groans and moans, but as the temperature soared they had precious little to keep their minds off the approaching deadline.

At dawn of their seventh day on the planet, thirty-six hours after their last meeting, water came rushing up from the chambered well Sif had cut into the earth with a low-frequency spectral device that had literally vaporized the ground.

Sutton and Byron had the pumps and pipes ready. Everyone lent a hand fitting the lines together. By noon the only thing left was to cut drainage holes in the ship's hull. As Sif adjusted a high-tolerance laser, the others looked on, breathing hard in the heat. By then the temperature was one hundred fifteen and climbing.

"Careful, Sif," Byron yelled up to her. "That ceramic is paper thin now. You could crack it with your body weight."

"I'll watch what I'm doing. Be quiet so I can concentrate."

One hole. Two holes. Two more, and she was done.

"That's it." She tossed the laser to the ground. "Somebody catch me!"

She sat and slid down the curved smoothness. Byron stopped her effortlessly with his huge arms.

"Everyone inside," Sutton ordered, and they retreated posthaste.

Once in the ship, they went directly to the corridor joining the innermost cabins. All controls had been shunted to Sutton's. Once they got their shots from Audrey, they would be ready to sleep through the maelstrom.

She unfastened the vaccinator from her belt, injected the proper amount of the drug along with an ultra-potency survival concentrate into each of them.

"There," she said. "We'll have forty-five minutes to an hour before the drug takes effect, but then we'll dream like babes for exactly three hundred and thirty-five hours."

"That gives us six hours' leeway with the air supply," Sutton said. "Good. Now let's get to our bunks."

"Who doubles up, Sutton?" Sif asked.

He shrugged, a most unlikely gesture from him.

Audrey came over and hooked her arms around one of his. "We do, right?"

He smiled broadly. "I guess so."

"Sif?" Byron asked tentatively.

"I thought you'd never ask." She slipped over to him.

They all took notice of Gallatin, alone.

He felt the awkwardness as he started for the third cabin. "Well, I think I'll lie down now. I hope to see you in two weeks. Good luck!" He opened the cabin door.

"Wait," Audrey said, and walked over to him. She put her arms around his neck and kissed him full on the lips for about fifteen seconds. When she was through she said, "That's for all the trouble I've given you the last few days. See you later, Jean."

He blushed as intensely as he did anything else. "Thank you, Audrey." He stepped inside, closing the door quickly.

Byron shook his head with a smile. "You're a pretty nice broad, Audrey."

"Oh, it isn't his fault he's the way he is." She grabbed Sutton again. "Come on, you hunk of meat. There's not a lot of time left."

"All right. In the morning, Byron, Sif!"

"At the resurrection, Sutton," Sif returned.

And they went to their rooms.

Sutton had some duties to perform before he rested. He had to shunt the air supply into the refrigeration unit, shut the outer door, and flood the ship. When he had finished, Audrey was already lying on the bunk.

"Did you put out the cat, dear?" she purred to him.

"Uh-huh." He smiled. "And left a note for the milkman." He started over to her.

9

It was cooler. Much cooler. Sutton's eyes realized they were open. He sat up quickly, found he was alone.

Going over to the jerry-rigged controls, he saw that the refrigeration unit was still working at maximum but that the hull had been drained of water. He put on his clothes and went out into the corridor. Voices were coming from Gallatin's cabin. No, not voices: giggles.

He walked to the door and opened it. The observer and the three members of his crew were sitting on the floor crosslegged, each with a glass of what looked like reconstituted grapefruit juice in his hand. There was a small beaker of clear liquid in the middle of the circle.

Byron raised his glass. "To our glorious captain! Long may he prosper, and heaven guard him from psychic rocks!"

"Hear hear! By all means! Bottoms up!" came the chorus. They all drained their drinks.

Sutton reached for Audrey's empty glass and sniffed it. "Is this what I think it is?"

She smiled cheshire.

"Where did it come from?"

The team's observer, not entirely the same man who had ridden the ship down to Tinderbox with them, stood up proudly. "I made it. I never go anywhere without

some brewer's yeast for a vitamin B supplement, and there are plenty of dehydrated potatoes that are as good as new when they're reconstituted. While I was waiting for the drug to take effect, I mixed up a batch of mash. I had always wondered how homemade vodka tasted, and I realized this would be as good a time as any to find out. The distilling apparatus I rescued from your laboratory before you flooded the ship. I hope you don't mind."

Sutton cleared his throat. "Oh, no, I don't mind at all. A little surprised, maybe, but I certainly don't mind. How does it taste?"

"Terrible!" Gallatin said as he refilled the glasses. "Want some?"

"Of course."

He was handed a fifth glass. It was terrible. But that was part of the fun. Noticing a dripping sound, he turned his head and saw that the distiller was still going full blast. Gallatin had fermented enough potatoes to keep them sloshing until the *Harvester* arrived.

"Before this party gets out of hand, is everything all right?" Sutton asked. "Is the temperature acting as we predicted?"

Byron nodded his head yes. "Perfect. It'll be cool enough for a stroll pretty soon."

"Then I'll have another drink."

"By all means, have another drink," Audrey said. "Jean, pour the man another drink." She turned to give him Sutton's glass, and saw an unhappy look on his face. "Hey, what's the matter? You decide you don't like your home brew after all?"

He shrugged. "It's not that. I just started thinking: I've completely lost my objectivity. That means I won't be able to go on any more missions with you people. I'll have to be reassigned to another crew, and that makes me feel lonely again."

The other four exchanged glances. He was really not such a bad guy when you got to know him, they said silently to themselves.

Sif voiced it for them all. "We won't tell if you won't, Jean."

"But will I be able to do my job right?"

Sutton said wisely, "I'm sure you will. People don't change much; they just show different sides at different times. When duty calls, you'll be as big a pain in the neck as you were before."

Gallatin was overjoyed.

"Then here's to you all," he exclaimed. "May our next assignment be accomplished as successfully as—"

"Successfully?" Sutton thought of the double black border that would surround Tinderbox's entry in the atlas from now on. "Yes, I guess so. At least we're still alive."

And to that they drank deeply. ☆

Sic Transit . . . ?
A Shaggy Hairless-Dog Story

Steven Utley & Howard Waldrop

There never was another man like Willow Beeman. There never would be, either, because Willow was the very last one in the whole world. His heart was closed out to the memory of men; and he did quite well without that memory, thinking of himself only as a large dog without hair.

He could recall a time, long, long ago, when he had been not a dog but a gorilla, or something close to it, at any rate. But he had forgotten all the parts about being a man and living in Sumer, in Babylon, and Tyre, and Rome. He even disremembered about Cheyenne and Bismarck and Bayonne, and about women, cigarettes, automobiles, ice cream, God, spaceships, books, and underarm deodorants. He would not even have remembered being a gorilla were it not for his friend Patrox, who was something very like a Galapagos tortoise and who had lived quite a long time. "Longer than you, anyway," Patrox was fond of reminding Willow.

Patrox was also fond of telling stories. Willow found these stories disturbing. They were full of esoteric references that got into his skull and nibbled at his brains. "What is *suburb?*" Willow would demand, seizing upon an odd word in one of Patrox's incomprehensible yarns, and Patrox would shrug and say that he didn't really know. "Then why do you tell these stories?" Willow

would ask, and Patrox would shrug again and say that he didn't really know that, either. "I think you're making it all up," Willow would declare, by way of closing the subject, and stomp away in a sulk, irritated as all get-out by the nibbling going on in his head.

Willow Beeman was not singular in his disbelief in both men and his own man-ness. Once he had cast off the memories, to say nothing of the overbearing swaggers, of *Homo sapiens,* it was easy for the animals to take his presence among them for granted. And, excepting Patrox, who had his doubts, they, too, thought of Willow only as a large dog without hair. Willow drank with them at the water holes and licked salt with them at the salt lick. He slept on the ground when he was tired, and he ate crawdads and wild berries when he was hungry. So he had all of the animal comforts and pleasures.

Except one. Willow kept noticing animals copulating.

"What makes them do that?" he wondered aloud, one mellow day of a mellow spring.

"There's a story about it," Patrox murmured at his side. "But it's a dirty one, and my mother would spin in her grave if I told it."

Willow frowned, perplexed by the oddness of the words *dirty* and *grave.* His head began to throb with nibblings. He turned Patrox over onto his shell and left him kicking there for a day or two, just to pay him back.

As the mellow spring passed into a mellow summer, Willow noted that all of the animals who had previously been copulating were now birthing lots of little animals which resembled them somewhat, despite a certain largeness of skull and a marked clumsiness of foot. Willow devoted no small amount of thought to the matter and, by and by, put together a fantastic theory, which he then presented to Patrox.

Patrox listened, nodded sagely, and said, "See, Willow, I told you it was dirty."

"You mean, I'm right?" said Willow, awed by his own hitherto unsuspected brilliance.

"You hit the *nail* squarely on the head," Patrox affirmed.

Willow winced and rubbed his temples.

A little more time passed, and Willow Beeman forgot all his newly gained knowledge of reproduction. Or, rather, he placed the information in that portion of his mind which contained all the rest of the useless information he had accumulated about the way the world was. Like how the leaves kept coming off the trees at a certain time of year. Like how that big, useless, white thing in the night skies sometimes was round and sometimes was only a curved line of light with pointy ends and sometimes was not there at all.

But another mellow spring came along eventually, and Willow looked around at the copulating animals, sighed, sat down on Patrox's back, and said, "I'm lonely. I think."

"You have me, don't you?" asked Patrox.

"Well, it occurs to me that this thing the animals do must be a lot of fun, since all of the animals do it at least once a year. And they always seem to be in great spirits afterward."

"How well I remember!" Patrox snorted. There was a note of longing in his snort.

"Really, Patrox? You've done it, too?"

"Yes, but it was a long time ago, when I was young and limber and full of juice, so don't get any ideas. Besides, we're both boys."

"What's *boys?*"

"Never mind, Willow."

Willow ground his teeth with frustration for a few seconds. Then: "Patrox, the more I think about it, the more I'd like to have some little animals that look like me. So I'm just going to have to find somebody with whom to do this wonderful copulation thing."

And he did, too.

It took Willow Beeman five weeks to completely recover from the wounds he suffered at the claws of the she-wolverine. He kept wondering where he had gone wrong.

"As I remember it," Patrox offered, "animals only copulate with other animals of the same kind."

"I'll have to find another big, hairless dog in that case," said Willow. *Or,* he added to himself, *if that doesn't pan out, at least a gorilla.*

"I tend to doubt that you'll find another big, hairless dog out here in the woods, Willow."

"Maybe I should go to one of those places that don't look like the woods." And, six days later, Willow pulled into just such a place.

It was actually all that was left of a city, but Willow didn't know this. He was, on the other hand, rather sore of foot and had begun to ache peculiarly in the groin, which is how it goes when notions about copulation take root in one's brains. Willow searched through the city, looking at disintegrating hulks of automobiles, rust-eaten shards of tin cans, a Lacrosse missile launcher, and the like—though, to Willow, these things were just some sort of strange plant life that couldn't be eaten.

Willow began to lose heart after a while. "This isn't getting me anywhere," he muttered to himself. "I do believe I've been everywhere in this place, and I haven't seen a single dog. Or even any gorillas. Maybe it'd be better if I just went on back to the woods and spent my time crawfishing with my hands in some pool."

It was as he was about to leave the place that he came upon the low, stone edifice with a door ajar and a sign that read CRYOGEN, INC.

Willow couldn't read the sign, reading being one of the things that Patrox had never quite gotten around to showing him how to do. But the door was half-open; and Willow, who was now feeling rather ferocious with frustration, barged in furiously. What happened next you would not believe, even if we told you. Suffice it for explanation that there was still some power running this or that arcane machine when Willow entered.

Willow stayed inside for a long, *long* time. When this or that arcane machine finally did sputter and give up the ghost, thereby releasing Willow from his protracted sleep, the low, stone edifice had been worn away to the level of the ground. The door and the sign were gone, too.

Willow sat up, looked around, and immediately saw that the strange, inedible plant life had given way to salt marshes and mud flats. There were a few stunted, scraggly trees, several of whom regarded him with baleful equivalents of eyes. Their attitude toward him appeared to be, "Hmpf, and what is *this?"*

Willow scratched his skull bemusedly and asked, "Where've all the animals gotten off to?"

"Dead and gone, most of them!" snapped one of the trees. "And good riddance, I say."

Willow recalled the purpose of his coming to the place. "You haven't seen any big, hairless dogs around here, have you? Or any gorillas?"

"No dogs or gorillas," the tree answered irritably. "Just something that looks very like a Galapagos tortoise."

"That must be Patrox!"

"Yes, I believe he did say his name was Patrox. And, now that I think about it, he spoke of some animal that looks the way you look. He said that he had known this animal a long time ago and had always thought highly of it." The tree peered at Willow closely. "I can't say as I find much in you to think highly of."

Willow was dejectedly surveying the new landscape. "So everything is gone," he muttered dismally.

"What did you expect?" the tree demanded. "I've been listening to your infernal snoring ever since I can remember, and my mother says you were here when *she* came to the area. You've been asleep for some time, and things have a natural tendency to change with time. Even people, though they generally resist that change."

"What is *people?"*

"Why, now that most of the animals are gone, people are the dominant form of life on the earth today. Look, I can't stand here all day and explain things to you, so why don't you walk around and sort of acclimate yourself to stuff. It stands to reason that you've got some catching up to do."

"What is *reason?"*

"Never you mind. Now run along."

Willow Beeman ran along, still considerably confounded. The world seemed drabber, uglier. The air tasted funny. Frankly, Willow was fairly well put out with it all after he had acclimated himself to only a few square miles of stuff. He parked his fanny on a smooth, green rock and said, "On top of everything else, I still haven't gotten to do what the animals do to make little animals like themselves."

"Eh?" said the rock, who was actually Patrox, who had been taking a nap. "Why, Willow! It's you! Long time, no see."

"I'm mighty glad to see you again," Willow confessed.

"Need help?" Patrox inquired solicitously.

"What is *help?*"

"What do you want more than anything else right now?"

"I want to copulate," said Willow. "I want to make little animals like myself. I came looking for another big, hairless dog. Or a gorilla, if I couldn't find a dog. I never found either. There must be something with which I can copulate."

"Have you tried it with people?"

"I wouldn't know people if I saw one."

Patrox squinted toward the salt marshes. "People hang around over there. As long as you're determined to do this, you may as well give them a try, Willow."

"Well, if you say so." Frowning deeply, Willow went over to the salt marshes. He returned one minute later, and he was frowning more deeply than before. "They're *frogs,* Patrox. I know frogs when I see them."

"They're people now," Patrox insisted.

"But when I lived in the woods, they used to keep me awake at night going *breedeep breedeep breedeep.* They're frogs."

"They're the best I can offer," Patrox stated flatly. "Take them or leave them."

"Oh, all right."

Willow walked back to the salt marsh and tried to get the frogs to copulate with him, but whenever he made a

lunge at one of them, it would vanish in a puff of pale blue smoke.

Not like frogs at all, Willow thought disgustedly. He squatted in the muck, feeling very sorry for himself. The ache in his groin was worse now, his stomach was rumbling with hunger, and his throat was raw with thirst. He did not look up when Patrox settled into the mud at his side.

"What now?" Patrox asked softly.

"I don't know," Willow admitted. "I was doing just fine in the woods. But now everything's so depressing. Where'd all the grass and ferns go? Where are the birds and deer and wolverines? I miss them. Everything's been a mess ever since I decided to make little animals like myself."

"Well, maybe that's *why* everything got messed up," Patrox suggested. "Weren't you happy being a big, hairless dog in the woods?"

Willow nodded forlornly.

"You probably could've gone right on being a big, hairless dog if you hadn't gone off looking for someone like yourself. When the time came for all the dogs to go away, you would simply have become something else. An ostrich, maybe. You'd have been an ostrich for as long as you could, then something else, then something else again. That's how you managed to hang on as long as you did back there in the woods, Willow."

"I'm not sure I quite follow you," Willow said. "And, besides, what's this got to do with everything going away?"

"It has everything to do with it," Patrox replied. "Willow, I've always been pretty certain that you were a gorilla before you were a dog, even though I didn't know you personally before then. You yourself apparently suspect as much. Before you were a gorilla, who knows? At any rate, the point is that you, being the only one left of your kind, managed to stay alive by not being whatever it is that you really are. And as long as there was only one of you, Mother Nature could pretend not

to notice you and go along with the idea of you being a gorilla or a dog or whatever.

"But then," Patrox continued, "Mother Nature got panicky when you decided to try and make little animals like yourself. Don't you see? You were safe in the woods as long as you were content to remain one of a kind, a unique exception to the rules. If you wanted to be a gorilla, fine, Mother Nature let you be a gorilla for as long as there were real gorillas in the world. The same goes for dogs. But there just wasn't—and *isn't*—a place for more than a single Willow Beeman creature. While you were away, Mother Nature was making everything become extinct. She was looking for you, trying to keep you from upsetting her apple cart, but she didn't find you. The more she didn't find you, the more panicky she became, and the more things she made become extinct. So now just about everything is gone, except for the trees and the people—and my kind. And you're in terrible danger, Willow. I suggest that you decide, but *fast*, what you intend to become now. You can't stay a dog, because there aren't any dogs left. You're too soft to make a good tree, even if they'd have you. And the people don't seem to care for you at all."

Patrox got to his four feet, turned, and started to amble away. "Be something quickly," he said over his shoulder. "Otherwise, Willow, you're extinct."

"But what else is there to be," Willow called after the departing Patrox, "if not a tree or a people?"

Patrox paused and shrugged within his shell.

Willow Beeman got up out of the muck and walked over to him. "Say, Patrox, why don't I be whatever you are?"

Patrox laughed. "Now *that* might be interesting. But what would you do for a shell? Your camouflage has to be good if you don't want to die off."

"I—I could make a shell out of dried mud." Willow walked around Patrox several times, examining him closely. "Yes, I think it can be done. I'll be one of your kind. Uh, Patrox? Just what *are* you, anyway? I mean, in case anybody asks."

"Don't you think that I look very like a Galapagos tortoise?" Patrox inquired slyly.

"But what are you *really?"*

Patrox looked around and asked, in a lowered voice, "You promise you won't ever tell anyone?"

"I promise, Patrox," said Willow.

"Tyrannosaurus rex, at your service, Willow." ☆

Unsilent Spring

Richard S. Simak & Clifford D. Simak

1

Robert Abbott was a well-known man, so Dr. Arthur Benton had saved two hours for him in the middle of an afternoon of an ordinarily busy day. When Abbott had phoned ten days before, he had insisted that his visit was important.

Benton, watching the clock as the hour approached and trying to hurry Abby Clawson, who regarded a visit to a doctor's office as a social occasion, wondered once again what could be so important as to bring Abbott to this little Pennsylvania town. Abbott was a medical writer with two best sellers to his credit, one a book on cancer and the other an exposé of faddy dieting. The doctors he consulted were important people, eminent medical researchers or lofty specialists; and Benton knew, with a twinge of honest envy, he was neither eminent nor lofty. He was just an old fuddy-duddy country doctor—a pusher of pills, a dispenser of liniments and salves, a setter of broken legs and arms, a wrapper-on of bandages, a deliverer of babies—who never had written a learned paper, conducted a research program, or been involved in medical studies, and who never would. He had not, in more than thirty years, done a single thing or uttered a single word that could be of the slightest interest to a man like Robert Abbott.

He had been wondering ever since the phone call why

in the world Abbott should want to talk with him; and over the past few days he had evolved an elaborate theory that there were two Dr. Arthur Bentons and Abbott had confused him with the other Benton. He had been so haunted by the idea that he had looked through a medical directory in search of the other Arthur Benton. Although he had not found him, the idea still clung to his mind, for it seemed the only explanation.

He found himself glad that the hour of Abbott's visit had arrived, for once he knew what it was all about—if indeed Abbott really wanted *him*—he could quit his worrying and get down to business. The worry and the wonderment, he knew, had interfered with business—like that matter of Ted Brown's symptoms that had shouted diabetes but had turned out finally not to be diabetes. That had been damned embarrassing, even though Ted, an old and valued friend, had been nice about it. Nice, perhaps, because he was so relieved he was not diabetic.

That was the trouble, he told himself, sitting behind his desk and listening with only half an ear to Abby's departing chatter: all his patients were old and valued friends. He could no longer be objective; he bled for all of them. They came in, sick to death, and looked at him with trusting eyes because they knew in their secret hearts that good old Doc could help them. And when he couldn't help them, when there was no one on God's green earth who could help them, they died, forgiving him with the trust still in their eyes. That was the hell of family practice, that was the torture of being a country doctor in a little town—holding the trust of people who had no reason to trust you.

"I'll be coming in again," Abby said. "I been coming here for years and you always help me. I tell all my friends that I am lucky in my doctor."

"That's kind of you to say."

If they were all like Abby, it wouldn't be so bad. For with her, there was nothing wrong at all. She was a tough old woman who would outlive them all. The only thing wrong with her was a tendency to secrete an enor-

mous amount of ear wax which required occasional irrigation. But the evident fact of sound, good health did not in the least deter the imaginary ills which brought her regularly to the office.

Rising to open the door for her, Benton wondered what she got from her regular visits, and thought he knew: fuel for conversation with her friends at the bridge table or with her neighbors across the backyard fence.

"Now you take care of yourself," he told her, putting into his voice a medical concern for which there was no need.

"I always do," she chirped in her bird-like old woman's voice. "If there's anything wrong, I'll come straight to you."

"Doctor," said Nurse Amy, hastening to guide Abby out, "Mr. Abbott has been waiting for you."

"Please send him in," said Benton.

Abbott was younger than Benton had expected him to be and not half as handsome. He was, in fact, a rather ugly-looking man—which explained, Benton thought, why the dust jackets of his books had not flaunted his photograph.

"I've looked forward to meeting you," Benton said, "and I don't mind telling you I've done some wondering at what brought you here. Surely there are other men."

"Very few," said Abbott, "like Dr. Arthur Benton. Surely you are aware that you are one of a dying breed. Not many medical men today are willing to devote their lives to a small community such as this."

"I've not regretted it," Benton replied. "The folks are good to me."

He waved Abbott to a chair and pulled another for himself from against the wall, not going back behind his desk.

"When I phoned you," Abbott said, "I couldn't very well explain. This is something that calls for face-to-face talk. Over the phone what I have to say would have made no sense at all. And I'm anxious that you under-

stand what I am getting at because I'll be seeking your cooperation."

"Certainly. If I can help, I will."

"I came here for several reasons," Abbott explained. "You're in family practice and must work with a broad spectrum of the population. You must deal with a variety of illnesses and disabilities, unlike the specialist, who sees only certain cases and usually only those patients who can afford his fees. One other matter—at one time you were in epidemiology. And then there is the matter of geography, as well."

Benton smiled. "You have done a good workup on me. For several years, early on, I was an epidemiologist with the National Health people. But I came to realize the field was all too theoretical for me. I wanted to work with individuals."

"You came to the right place to do it," said Abbott.

"What's this business about geography?" Benton asked. "What's geography got to do with it?"

"I'm trying to track down an epidemic," Abbott said. "There may be a lot of factors involved."

"You can't be serious. There's no epidemic here or anywhere else I know of. Not even in India or the underdeveloped countries. Hunger, of course, but . . ."

"I'm fresh from months of burrowing through statistics," said Abbott, "and I can assure you there is an epidemic. A hidden epidemic. You've seen it yourself. I am sure you have. But it's been coming on so gradually and so undramatically that it has made no impression on you. A lot of little things that slipped by unnoticed. More people gaining weight—in some cases, very rapidly. That, by the way, may explain some of the faddish diets that are popping up. Wide variance in blood sugar levels—"

"Wait a minute," said Benton. "I had a patient just last week, and would have sworn he had diabetes."

Abbott nodded. "That's part of what I'm talking about. If you go back in your records, you'll probably find similar instances, perhaps not so dramatic as to sug-

gest diabetes. But you'll find minor symptoms. I can tell you what else you'll find: More people feeling groggy, irritable, looking bleary-eyed. An increase in obesity. A lot of complaints about sore and aching muscles. People not feeling well—nothing specifically wrong with them, nothing you can put your finger on, but just not feeling well. A lot of people with no pep, a general tiredness, a loss of interest. Fifty years ago, you would have been prescribing tonic or sulfur and molasses to clear up the blood—thinning out the blood, I believe, was how they put it."

"Well, I don't know . . . the symptoms somehow sound familiar. But an epidemic?"

"If you'd seen the statistics I have seen," Abbott said, "you'd agree it's an epidemic. It's happening all over the country, perhaps all over the world."

"Okay, granting you are right—which I don't—why did you come here? You said you wanted my cooperation. How could I possibly help?"

"By keeping your eyes open. By thinking about what I've just told you. You're not the only one I'm seeing. I am talking to a number of other doctors, most of them in family practice. I will be asking them to do the same thing as I am asking you—observe, think about it, perhaps pick up a clue here and there."

"But why us? There are specialists."

"Look, Doctor," said Abbott, "how many people go to a specialist because they're feeling all beat out or have aching muscles or for most of the other things we have been talking about?"

"Not many, I would suppose."

"That's right. But they come running to good old Doc, bellyaching because they aren't up to par, figuring he'll pull a miracle out of his hat and fix them up."

"How about the disease-prevention people in Atlanta?" Benton asked.

"That's where I got some of my statistics," Abbott told him. "Some of the people there agree with me that there may be an epidemic, although I don't think any of them take it too seriously. Most of them think I'm trying

to cook up another sensational book. Not that any of my books were sensational, but there are some doctors who think they are. The trouble with Atlanta is that they deal solely with data. What this job takes is field work. I need people like you, aware of the situation, looking at their patients and asking themselves questions, trying to see patterns. Not spending a lot of time at it, of course, for none of you will have the time, but keeping the problem there in the back of the mind. What I should like some months from now, if you are willing, are your impressions. Maybe then, with some input from a number of family doctors who see a lot of people representing a broad socio-economic range, it will be possible to pull together some sort of general picture of what is happening."

"I am afraid," said Benton, "that you contacted me because of my work in epidemiology. It is only fair to tell you I've forgotten most of what I ever knew in that particular field."

"Well, if it doesn't help, it certainly won't hurt. I might have come here anyhow. You may remember I said something about geography. Geography often is an epidemiological factor. Here you are located in a broad, fertile valley, while on either side of the valley lie rugged hills, an almost primitive area. I would assume that you have patients among both hill and valley people."

"That is true," Benton answered. "I guess most of the hill people figure I'm their doctor, although I don't see them often. Either they don't get sick as often as the valley people, or when they do they manage to tough it out. Some of them may have an ingrained reluctance to submit to doctoring. A lot of them, I suspect, use folk medicine, old-time recipes handed down through the years. That is not to say there is anything wrong with that. Much as we may hate to admit it, some of those old cures work."

"Geography may have nothing to do with it," said Abbott, "but it's a factor we can't cancel out until we've had a look at it."

"And there's a possibility you are wrong. There may be nothing to look for."

Abbott shook his head. "I don't think so. Doctor, you *will* go along with me? You'll walk that extra mile?"

"Yes, of course," said Benton. "I'll keep it all in mind. I'll be seeing you again, you said, or hearing from you, a few months from now."

"I can't tell you exactly when. I have a lot of ground to cover. But I promise I'll be in touch again."

They talked a while longer, then Abbott left.

Benton followed him out to his car, thinking as he walked along with him that it had been a long time since he had met a man he liked so instinctively. Here was a man whose name in the last few years had become a household word and, yet, there was about him none of the self-importance that so many eminent men wore as a cloak wrapped about themselves. He found himself looking forward to that day, some months from now, when they would be in touch again. Here was a sincere man you did not brush off automatically, even if his ideas seemed a bit offbeat. Thinking of it, Benton had to admit that Abbott's idea did seem a bit offbeat.

His first patient after Abbott left was Helen Anderson.

Helen and Herb Anderson were old family friends, had been for many years. Herb owned a men's ready-to-wear store; he was one of the community's most successful businessmen. Helen was president of the Flower and Garden Club and, for years, her roses had been blue ribbon winners at the State Fair.

She showed him her right hand. The skin across the knuckles was rough and red. When he rubbed his thumb over it, it felt dry and scaly.

"Looks like eczema," he said. "We'll try some ointment on it."

"I worked in the garden after I noticed it," she said. "I don't suppose that did it any good."

"Probably no harm, either. How's the garden doing?"

"Couldn't be better. You should see my peas, and I am trying a new kind of tomato. You and Harriet drop

over some evening and have a look at it. It's been a long time since the four of us have gotten together."

"That's part of being a doctor," Benton said. "You think you have an evening and then something happens. You never can be sure."

"You work too hard."

"All of us do," he told her. "We get involved. What we do assumes a great importance. Your garden, for example."

She said, seriously, "My garden does me a lot of good. As you know, I'm not a fancy gardener. I'm a dirt gardener. I don't wear gloves. I get down in there with my hands. I like the feel of soil. It's so warm and it has such a nice texture. It has the feel of life to it. It plays hell with my hands, of course; but there's something so elemental in it that I can't resist. Herb, of course, thinks that I'm crazy."

Benton chuckled. "Herb's no gardener."

"He pokes gentle fun at me. He's a golfer at heart. But I don't make fun of his golf. I don't think it's fair."

"How's his golf this year? I remember he was bragging last year that he had improved."

Helen Anderson frowned. "He isn't playing as much this year. Not as much as he used to."

"Maybe he's busy. This is a bad year for business. Inflation and tight money and—"

"No, it isn't that," she said. "Doc, I'm worried about Herb. He seems to be tired all the time. He has to be really tired not to play golf. Does a lot of eating between meals. He's gaining weight. Grumpy, too. Some days he's so grumpy I'm glad to see him go to work. I've told him to come and see you."

"I wouldn't worry about him," said Benton. "Maybe he's working too hard. Why don't you try to get him to take a couple of weeks off and the two of you go on vacation? A rest would do him good."

"It's more than just tiredness," she continued. "I am sure of that. He's tired, of course, but there's something more than that. Doc, won't you talk with him?"

"I can't go out soliciting business. You know that."

"But as a friend . . ."

"I can tell him you're worried about him. I can lean on him a little."

"If you would," she suggested.

"Sure I will," said Benton. "But don't you go worrying yourself sick. It's probably nothing."

He wrote her a prescription and she left, extracting a promise he'd drop by soon to have a look at the garden.

The next patient was Ezra Pike. Ezra was a farmer south of town, seventy years old, still working his farm with only occasional help.

He had hand trouble, too. He had a nasty gash across the knuckles.

"The baler broke down," he explained, "and I was fixing it. The wrench slipped."

"We'll get that hand cleaned up," Benton said. "In a day or two it'll be like new. Don't see you often, Ezra. You *or* Mrs. Pike. I'd starve to death if everyone was like the two of you."

"Never did get sick much. Neither one of us. The boys, neither. We are a healthy family."

"How are the boys these days? I haven't seen them for ages."

"Dave, he's down in Pittsburgh. Working in a bank. Investments. Ernie is a teacher over in Ohio. School's out now, and he's running a boy's camp up in Michigan. We're real proud of our boys, both of them."

"How are the crops?" Benton asked.

"Good enough," said Pike. "Some trouble with bugs. Never used to have that kind of trouble, but it's different now. No DDT, you know. They up and banned the stuff. Was poisoning everything, they said. Maybe so, but it made farming easier."

Benton finished with the bandaging. "There, that's it," he said. "Keep watch of that hand. If it hurts a lot or gets red and puffy, come in to see me."

Pike got spryly from the chair. "Got a good crop of pheasants waiting for you. Soon as the season opens, we'll be looking for you."

"I'll be out," said Benton. "Always have, you know.

It's been a long time, Ezra, I've been hunting on your land."

"You're welcome any time," Pike said. "But there ain't no need to tell you. I take it that you know."

Nurse Amy appeared as soon as Pike had left. "Mrs. Lewis is here," she said. "She has Danny with her. Someone bounced a rock off him. She is frothing mad."

Danny, who by all odds could be classified as the meanest kid in town, had a goose egg on his head. The rock had broken the skin and there was some blood, but an X-ray showed no fracture.

"Just wait," his mother raged, "until I get my hands on the kid who threw that rock. Here Danny was doing nothing, just walking down the street . . ."

She went on and on, but Benton got her quieted down and the two of them finally left.

After that came Mary Hansen, with her arthritis; Ben Lindsay, in for a post-coronary check; Betty Davidson, with a sore throat; Joe Adams, with a lame back; Jenny Duncan, who was going to have twins and was twittery about it.

The last patient of the day was Burt Curtis, an insurance man.

"Goddamn it, Doc," he said, "I feel all beat out. Sure, a man expects to be tired after a long day's work, but I get tired in the middle of the morning. By ten o'clock, I am all pooped out."

"It's sitting at that desk," said Benton, kidding him, "lifting all those heavy pencils."

"I know, I know. You don't have to rub it in. I've never done an honest day's work in all my life. Selling insurance isn't something you can classify as labor. The funny thing is that I feel as if I were building roads. Muscles get sore and achy."

"Hungry, too?" Benton asked.

"Funny you should say that. I'm hungry all the time. Keep stuffing my gut. A lot of snacking. Never used to do that. Three squares were all I needed."

"Even-tempered, I suppose."

"What the hell, Doc! I come in to tell you I get tired and you ask about my temper."

"Well, are you? Even-tempered, I mean."

"Hell, no. I'm all out of sorts. No patience. Let one little thing go wrong and I start storming. No way for a businessman to act. Keep on like that, and you get a reputation. Adele says I get harder to live with every day."

"How about your weight?"

"Seems to me I'm getting heavier." Curtis patted his gut. "Had to let out my belt one notch."

"We'll get you on the scales and see," said Benton. "I'll tell you what I'd like to do: run some tests. Nothing fancy or extensive. We could do them here."

"You got something in mind, Doc? Something wrong with me. Something really wrong."

Benton shook his head. "Nothing at all. But I can't even make a guess until I see some tests. Blood sugar. Things like that."

"If you say so, Doc," said Curtis.

"Don't worry about it, Burt. But when a man comes in and says he's all tired out and gaining weight and getting downright mean, I have to look into it. That's my job. That's how I make my living and keep my patients well."

"Nothing serious, then?"

"Probably nothing much. Just some little thing that once we know about it, we can get it straightened out. Now, about those tests. When can you come in?"

"Tuesday be all right? Monday I'll be busy."

"Tuesday is just fine," Benton said. "Now get over on those scales."

When Burt had gone, Benton walked out into the empty waiting room. "I guess that's it for the day," he said to Amy. "Why don't you go home?"

Back in his office, he sat down at his desk and began filling in Burt Curtis' record. Tiredness, intermittent and persistent hunger, gaining weight, sore muscles, irritability—all the symptoms Abbott had talked about that very afternoon. And then there was Herb Anderson as well. From what Helen had said, his condition

seemed much the same as Burt's. Both of them and Ted Brown, too.

What the hell, he wondered, could be going on? Abbott had said "epidemic." But did three people in one little town add up to an epidemic? He knew, however, that once he had gone through his records, he would probably find others.

The office was quiet. Amy had left and he was quite alone.

From some distance off came the wild and frantic snarling of a racing motorcycle. Young Taylor, more than likely, he thought. Someday the damn fool kid would break his neck. Twice he's needed patching up, and if he kept on there'd likely come a day when patching up would be superfluous—although, Benton told himself, that was no concern of his, or should be no concern of his. But the terrible thing about it was that he found himself concerned.

He was, he realized, concerned with everyone, too concerned with everyone in this silly little town. By what mysterious process, he wondered, did a man through the years manage to take an entire town to heart, shift its burdens to his back? Did the same thing happen to other aging doctors in other little towns?

He pushed Burt's record to one side and laid the pen beside it.

He gazed about the room, shifting his glance from one object to another as if he were seeing them for the first time and trying to fix them in his memory. They had been there all the time, but for the first time he was noticing them, becoming acquainted with this environment in which he had lived and functioned through the years. Too busy, he thought, too busy and concerned to have ever looked at them before. The framed diploma, hung proudly on the wall so many years ago and now becoming fly-specked; the fading and worn carpeting (some day, by God, when he found the money, he'd have new carpeting put in!); the battered scales shoved against the wall; the sink and basin; the cabinet where he kept all the samples sent out by pharmaceutical hous-

es to be given patients (and there were many of them) who could not afford prescription drugs. Not the kind of office, he thought, that a big-city doctor would have, but the kind *he* had—a combination of office, examination room, treatment room—the hallmark of the family doctor always strapped for funds, hesitant to send out bills that would embarrass patients he knew were short of cash, trying to treat people who should go to specialists but who could not afford their fees.

He was getting old, he told himself—not too old yet, but getting there. There were lines upon his face and gray showing in his hair. There would come a time, perhaps, when he would have to take in a younger doctor who, hopefully, could carry on the practice when he would have to retire. But he shrank from doing so. He was jealous, he knew, of his position as the town's one doctor, even though he knew it was most unlikely the town would accept anyone that he brought in. Not for a long, long time would they accept anyone but him. Patients would refuse to see the new man, waiting for Old Doc. It would take years before he could shift any appreciable percentage of his patient load.

Over in Spring Valley, Dr. Herman Smith had a son who was in internship and who soon would join his father. Slowly, over the years, young Doc Smith would phase out old Doc Smith, father followed by the son, and there would be no hassle. Oh, some hassle, surely, but none that would be noticed. That, Benton told himself, was the ideal method of succession. But he and Harriet had never had a son—only the one daughter. He had hoped, for a time, he recalled, that April might want to be a doctor. But that would have posed problems, too, for it would be unlikely the town would accept a woman doctor. The problem, however, had never arisen, for April, it turned out, had been big on music and there was no stopping her. Not that he had ever wanted to. If music was what she wanted, then it would be music. She was in Vienna now. Christ, these kids! he thought. The world belongs to them. Off to London, Paris, Vienna, and God knows where else, with no

thought that it was extraordinary. In his youth, he recalled, it had been a big adventure to get a hundred miles from home. And, come to think of it, even now he seldom got more than a hundred miles from town. He stuck close to his work.

I'm provincial, he thought, and what was wrong with that? A man could not encompass the world. If he tried, he would lose too much. Friends and familiarity of place, the warm sense of belonging . . . Since he had come to this town, many things had happened to him—good things—with quaint little privileges established. Like old Ezra Pike and his annual crop of pheasants reserved for good old Doc and a few others in the town, and for no one else.

He sat in the office and tried to peel the years away, back to the time when he had first come here; but the years refused to peel and the diploma still was fly-specked and the scales still battered and he remained an aging man who carried the town upon his back.

The phone rang and he picked it up. It was Harriet.

"When are you coming home?" she asked. "I have a leg of lamb and it will be ruined if you don't get here fairly soon."

"Right away," he said.

2

The next day was Saturday and office hours were from eight till noon. But, as was usually the case, the last patient was not gone until after one.

Once the waiting room was cleared and Amy had gone home, Benton got to work on the files. He went through them carefully, making notes as he went along. He didn't finish the work on Saturday, and came back Sunday morning.

Going back through ten years of records, he was able to isolate some trends. There had been, in those years, a substantial increase in the symptoms Abbott had outlined. The incidence of obesity had risen rapidly. In more instances than he had recalled, the high level of

blood sugar had indicated diabetes, but further tests had inevitably failed to bear out his tentative diagnoses. There had been, increasingly, a spate of muscular soreness. There were an increasing number of patients who had complained of general malaise, with no apparent cause.

Most of the symptoms were found in townspeople. Among the farm families, only the members of one family, the Barrs, had experienced the symptoms. The Barrs, about three years before, had come from somewhere in Ohio, buying the farm of Abner Young, a recluse who finally had died of old age and general meanness. And not a single case with those symptoms showed up among the hill people.

Maybe, after all, Benton told himself, geography might be a factor in Abbott's epidemic—if there were an epidemic. But if some of the townspeople had the symptoms, why not all of them? If farmers were immune, as seemed to be the case, what about the Barrs? What was different about the Barrs? Recently arrived, of course, but what could that have to do with it? And what was so magic about the hills that in all the hill folk no symptom had turned up? Although, he reminded himself, he should not assign too much weight to the negative data from the hills. The people there, a hardy tribe, would not deign to visit a doctor for such minor reasons as being unaccountably tired or putting on some weight.

He pulled the sheets of notes together and, searching in his desk drawers, found some graph paper. The graphs, when he had them drawn, showed nothing more than he already knew; but they had a pretty look to them and he found himself imagining how they would look printed on the slick paper of a prestigious journal, illustrating a paper that might be entitled "The Epidemiology of Muscular Exhaustion" or "The Geographical Distribution of Obesity."

He went over the notes again, asking himself if he might not be looking at what amounted to medical constants—conditions persisting through the years, with

only minor fluctuations from year to year. This did not seem to be the case. Ten years ago, there had been few of the symptoms—or at least few of his patients had shown up complaining of them. But, beginning seven or eight years ago, they had started to show up; and on the graph the curves showing their distribution over time rose sharply. There was no doubt the symptoms were a recent phenomenon. If this were so, there must be a cause, or perhaps several causes. He searched for a cause, but the few he could think of were too silly to consider.

Benton looked at his watch and saw it was after two o'clock. He had wasted most of the day and Harriet would be furious at his not showing up for lunch. Angrily, he shuffled the notes and graphs together and thrust them in a desk drawer.

He had wasted most of the weekend at it, and now he would wash his hands of the whole thing. Here was something that more properly belonged in a research center than in the office of a country doctor. His job was to keep his people well, not to tackle the problems of the world. After all, this was Abbott's baby and not his.

He wondered at the anger that he felt. It was not the wasted weekend, he was certain, for he had wasted many weekends. Rather, perhaps, it was anger at himself, at his own inadequacy at being able to recognize a problem, but be unable to do anything about it. It was no concern of his, he had insisted to himself. But now he had to admit, rather bitterly, that it was deeply important to him. Anything that affected the health and well-being of the town was his concern by automatic definition. He sat at the desk, his hands placed out before him, palms down on the wood. His *concern,* he thought. Most certainly. But nothing that for a time he should wrestle with. He had a job and that job came first. In the chinks of time left over, he could do some thinking on the problem. Perhaps by just letting it lie inside his mind an answer might be hatched, or at least the beginning of an answer. The thing to do, he decided, was forget it and give his subconscious a chance to work on it.

3

He tried to forget it, but over the weeks it nagged at him. Time and time again, he went back to the notes and graphs to convince himself that he was not imagining the evidence found in his records. Could it be, he wondered, a circumstance that prevailed only in this place? He wondered what the other physicians Abbott had talked with were doing about it—if they were doing anything; if, in fact, they had even looked at their records; and if they had, what they might have found . . .

He spent hours going back through old issues of *The Journal of the American Medical Association* and other journals, digging into the dusty stacks down in the basement, where they were stored. He could easily have missed something bearing on the matter in the medical magazines, for up till now he had not been too conscientious in his reading of them. A man, he told himself—making excuses for himself—had so little time to read; and there was so damn much to read, so many medical eager beavers intent on making points that there was a continuous flood of papers and reports.

But he found nothing. Could it be possible, he wondered, that despite Abbott's work he, Benton, might be the only man who knew about the condition that he had come to characterize as the exhaustion syndrome?

A disease? he wondered. But he shied away from that. It was too selective to be a disease, its parameters too narrow. A metabolic disorder, more than likely. But for a metabolic disorder to come about, there must be an underlying cause.

Burt Curtis, it turned out, was no more diabetic than Ted Brown had been. His blood sugar was haywire, but he was not diabetic. After Helen had nagged at him for a time, Herb Anderson came in and his case was almost identical with Burt's and Ted's. An insurance salesman, a merchant, and a down-at-the-heels house painter—what in the name of God, he asked himself, could those

three have in common? And then there was the Barr family! The Barr family bothered him a lot.

There were others now as well, not such classic examples as Burt and Ted and Herb; but each of them showed some of the symptoms of the exhaustion syndrome.

"You have to put it out of your mind," Harriet said one day at the breakfast table. "It's the 'good old Doc' complex again. You have allowed it to drive you all your life and here it's driving you again. You can't go on like this. You have other things to do, you have a full-time job. If this Abbott person had not shown up, you would not have noticed it."

He agreed with her. "No, I don't suppose I would have. Even if I had, I would not have paid too much attention to it. But when he talked to me, he made an uncommon lot of sense. As you've heard me say, I suppose far too often, medicine is not an exact science. There's an awful lot of it a man can't understand. A lot of problems he can't begin to understand."

"You've encountered those kind of problems before," Harriet pointed out, just a shade too sharply. "And you have always said—I have heard you say it often—that someday a researcher will come up with an answer. You didn't spend days fretting over those problems. Why can't you stop this fretting now?"

"Because, damn it," he told her, "here it is, right underneath my nose! There's Ted and Herb and Burt, and a lot of others—more of them every day. There is nothing I can do about it. It's nothing that I recognize; I'm completely in the dark. I'm tied hand and foot and I don't like the feeling."

"The trouble is, you are feeling guilty. You've got to cut that out."

"All right," he said. "I will cut it out."

But he didn't.

He did what, at the time, seemed rather silly things. He stopped at the Fanny Farmer candy shop and learned that in the last three years sales had increased

by almost twenty-five percent. He phoned the two small factories at the edge of town and was told that sick leave and absenteeism had risen by almost ten percent in the last few months. At the drug store, he talked with his old friend the pharmacist, who told him that over-the-counter sales of analgesics were higher than at any time within memory.

That afternoon he phoned Dr. Herman Smith at Spring Valley. "You have a minute to talk with a competitor?" he asked.

Smith snorted. "You're no competition," he said. "We got that worked out years ago, remember? You work your side of the street and I work mine. We have our territories all laid out and fenced, and we have a gentleman's agreement to do no trespassing. But I won't let you in on any of my trade secrets, if that's what you're calling about."

"Nothing like that," said Benton. "I've been noticing some strange things. I've been wondering if you are noticing them as well."

Smith's voice became serious. "You sound worried, Art."

"Not worried. Puzzled, that's all." He went ahead and told Smith what he had been noticing, making no mention of Abbott.

"You think it's important?"

"I don't know about its importance, but it's a funny business. There seems to be no reason for it, no underlying cause. I've been wondering if it's only happening here or if—"

"If you want me to, I could have a look at my records."

"If you would," Benton said.

"No sweat. I'll let you know in a week or so. I'll even draw you up some graphs to match with yours. If I find anything, that is."

Dr. Smith didn't take his week. In four days' time there was a fat envelope. Opening it, Benton found not only the graphs, but statistical tables and a sheet of Xeroxed notes.

Benton had no need to take his own graphs out of the desk; he knew them now by heart. Staring at Smith's graphs laid out on the desk top, he knew immediately they were almost identical with his own.

He sat down weakly in his chair, grasping the arms so tightly that his fingers ached.

"I was right," he told himself. "God help us, I was right!"

4

When bird season opened, Benton drove out to the Ezra Pike farm for an afternoon of pheasant shooting, jotting down a mental note that before the day was over he would ask about the Barrs, who were Pike's next-door neighbors. But he never got around to it.

Pike had a lot to show him: the pen of shoats that were becoming sleek and plump for the late-fall market; the high-quality wheat from the little patch he had grown as a hobby and which he was intending to take in to Millville to an old-time water mill to be ground into flour by a genial, half-mad hermit who was unconvinced that he lived in the twentieth century; the ritual sampling of some cider Pike had run off, using the fruit from an ancient, withered tree, the only one remaining in the country that bore the famed snow apples of another day. There was politics to talk about and the rising prices of food; the gasoline-wasting propensities of the anti-pollution equipment which had been installed on cars; the latest, rather mild scandal of the neighborhood, involving a boy barely out of his teens and a widow who was old enough to be the lad's grandmother. They shot some pheasants, ate fresh apple pie—washing it down with milk—and talked of many things, the time passing pleasantly.

It was not until he was halfway home that Benton remembered he had not asked about the Barrs.

The following Saturday he skipped his morning office hours, loaded his gun into the car trunk, and took off for the hills, ostensibly to shoot quail. He made the quail

trip several times each autumn, but when he thought about it he realized that it was not the quail he was looking for now, but the time that he could spend with the hill people.

If one had asked them what they were, they would have said that they were farmers; but precious few of them did any actual farming. Their acreages mostly stood on end, with only here and there a creek bottom or a hillside bench that was level enough for a plow to turn the soil. They planted some corn to fatten up the scrawny hogs that mostly ranged the woods for acorns, a field of potatoes at times larger than the corn patch, and a slightly smaller garden. They might at times plant other crops as well, but mostly it was corn, potatoes, and the plants in the garden. The women canned a lot of vegetables, for there was no electricity to freeze them, and even if there had been, few of the hill people could have scraped together the money for a freezer. There were strawberry beds for eating and for canning, as well as wild fruits such as blackberries and raspberries. By the end of autumn, the cellars of the hill farm homes were well stocked with canned vegetables and fruit, with potatoes and "winter keeper" apples from the scraggly trees of their haphazard orchards.

As he drove, Benton fell to wondering, as he had many times before, just how the hill folk managed to live from year to year. Each family ordinarily had a cow or two, as well as a few hogs and a bedraggled flock of chickens. Most of the hogs were butchered for meat rather than sold on market, and many of the farms had smokehouses out in back in which hams and bacon were cured. Game such as rabbits, squirrels, coon, and an occasional deer—usually taken in a fine disregard of game laws—helped round out their diet. Fish from the many streams, as well as ruffed grouse and quail, were often on the table. Somehow or other they managed to eat rather well all the year round.

But they had little money. They were largely self-sufficient and they had to be, raising or gathering most of their food. They bought little at the grocery store: flour,

sugar, coffee, salt . . . Living that way, Benton told himself, they didn't need much money. What little they had they earned at odd jobs here and there. A few of them worked at small industrial plants in the valley, but not very many of them. He suspected that few had any taste for such work. Occasionally some of them peddled firewood to the townspeople.

But, despite all the hardships which they probably did not regard as such, they were a relatively happy, reliable, proud, and independent people, filled with dignity and inborn courtesy.

Benton had a good day, dropping in at the homes of several families that he knew. He did a little hunting, but not a great deal; getting, in all, three quail. But he did a lot of talking, sitting on the steps of the sagging verandahs of houses so old that moss grew upon the clapboard and the brick—houses there so long that they were accepted even by the environment in which they sat as a part of that environment—or as he roosted on a split-rail fence that might have been erected a hundred years before or stood in the coolness of a springhouse after he had drunk a dipper full of ice-cold buttermilk.

They talked of many things, he and these scarecrow men with carefully sewn patches on their pants, their hair grown long not because long hair was in style but because no one in the family had as yet gotten around to cutting it. They talked of the weather, which bore heavily on their minds and was worthy of lengthy conversation; of someone having seen a panther, although wildlife biologists were agreed there had been no panthers in these hills for almost forty years; of times long gone and tales told by forebears now only dimly remembered.

In the course of these conversations Benton always got around to mentioning the exhaustion syndrome—although he did not use that term—explaining how patients for no apparent reason were gaining weight, were feeling all tired out in the middle of the morning, and had a seemingly never-satisfied longing for sweets. He didn't know what caused it, he told them; and he was

somewhat upset about it and was wondering if there might be any such condition in the neighborhood.

They looked at him with ill-concealed laughter in their eyes and said, no, unless that was what might be wrong with Grandpa Wilson or Gabby Whiteside or any one of another dozen people. They regaled him with stories of fabulously lazy men who, all their lives, had worked much harder to avoid work than the work would have been itself. But their tales all had the ring of folklore to them, so Benton accepted them as such. Most of the shiftless men who peopled the stories, he realized, did not exist and never had existed.

He came home convinced that no signs of Abbott's epidemic existed in the hills.

It could be body chemistry, he told himself—something in the hills, the way of life, the things they ate, the conveniences they could not afford—that made all the difference. Although maybe, he admitted, he had that turned around: not something that kept the syndrome from the hills, but something that afflicted the townspeople with the syndrome.

Nonetheless, Benton thought, this business of body chemistry might be the best bet yet. Figure what the townspeople had or did not have, did or did not do, and the answer *might* be there. But, he warned himself, the elusive factor that he sought must be unique to town life.

That evening he went to the office, pleading paperwork, and wrestled with himself. Sitting at the desk, doing nothing except sitting at the desk, with a single gooseneck lamp making a splash of light upon the desk top, he tried to think it through.

He had tried to forget all the silly business, but he could not forget it. Perhaps he was unable to forget it because it was not a silly business, because he knew all the time, deep down within that hidden core of medical awareness, that it was a greater threat than he had allowed himself to believe—and knew as well that if he were to keep faith with his community he must not go on ignoring it, or attempting to ignore it. Although, he

asked himself, how, for my own peace of mind, can I do other than ignore it? I do not have the training . . . He was not a research man. For too long he had been a plodding country doctor, exerting all his energy and knowledge to fight disease and death in this tiny corner of the land. He had no tools for research; he did not have the brain for research; he did not have the time—and, he thought, he might as well admit it, he did not have the devoted objectivity and the narrowness of purpose to do a research job.

But, ill-equipped as he might be, he owed it to the town to have a go at it at least. That was the hell of it—he owed it to the town! All his life he had owed everything he was and ever hoped to be to the people of this little town in payment for the trust that they had in him. He had placed them in his debt, but they had placed him in even greater debt. Just walking in and talking with him cured half of what was wrong with them, and how did a man respond to a faith like that? They thought he had all the answers, so he could not tell them how few answers he did have. Their faith in his infallibility often was the one last resort they had going for them. They put their faith and trust in him, and in doing that they made him feel guilty when he was forced, through inadequacy, to betray that faith and trust. How, he wondered, was a man trapped? How had he allowed himself to be trapped into such a situation?

He dug into the desk drawer and brought out his notes and those of Dr. Smith. Carefully, he went through them, hoping that further study might give him a clue. But there seemed none.

Hormones? he wondered. Some sort of hormonal imbalance? If that were true, however, there would have to be something to have brought about such an imbalance. This was not the first time he had thought of hormones, for an imbalance of insulin would explain the diabetic symptoms; but the hell of it, he reminded himself, was that it had not been diabetes. Glucogen, perhaps? But the trouble there was that no one knew for certain what glucogen really did, although it was suspected that by el-

evating the glucose blood level it might kill appetite. The hypothalamus? he asked himself. Or the steroid hormones? No, it could be none of these.

Personality disturbances? Fine as far as obesity and irritability might be concerned, but certainly not for any of the other symptoms. And, anyhow, personality disturbances were slimy things to work with and psychiatric training was required to cope with them.

Enzymes? Vitamins? Trace elements?

He was going at it wrong, Benton told himself. He was going at it backward. The way to work out the syndrome was to find a common factor that might be the cause and then try to cipher out what effect the factor had. Although, still thinking of it backward, the enzymes might hold more promise than any of the others. Enzymes basically were catalysts that sped up biochemical reactions. Not that biochemical reactions could not occur without the enzymatic catalytic action, but the reactions would be so slow that the body could not function.

He sat quietly and ran through his mind what he could recall about enzymes. He was surprised to find that after all the years he had scarcely thought of enzymes, he could remember so much about them. The reason that he could recall so much was that instead of thinking directly about enzymes he found himself recalling Professor Walter Cox—old Stony Cox, eccentric and beloved in a rather ragged way—who had paced up and down when he lectured, bobbing like a ball, his head hunched forward between skinny lifted shoulders, punching the air with one clenched fist to emphasize his words. He wondered where Stony Cox might be this night. More than likely dead, he thought, for that had been more than thirty years ago and he had been an old man then.

Thirty years and all, the words came clearly to mind. "The enzymes," Cox had said, jabbing wildly at the air, "are made up of apoenzymes and coenzymes, the two forming a loose bond to make up an enzyme. The coenzyme normally is a vitamin plus another organic mole-

cule, bonded together. And now, gentlemen, today I ask that you focus your attention on a single coenzyme, the coenzyme A, which is directly involved in two biochemical cycles, the fatty-acid cycle and the citric-acid cycle . . ."

Benton sat limp in his chair, shaken by what his mind had conjured up, dredging out of a past that measured more than thirty years an instant of almost complete recall—not of the man alone but of the words he had spoken, the slanted shine of sunlight through the slatted blinds, the smell of chalk dust in the air—hearing the words perhaps more distinctly then he had heard them at the time.

Was it a sign? he wondered. Had his subconscious mind reached back and laid a bony finger on this isolated incident to tell him what his conscious reasoning could not tell him?

The phone rang and it was not until the third ring that he realized what it was. Almost as if in a dream, he reached out for it.

"Hello," he said. "Dr. Benton here."

"Are you all right?" Harriet asked.

"Sure, I am all right."

"Do you know what time it is?"

"No. No, I hadn't noticed."

"It's two o'clock," Harriet said. "I became concerned about you."

"I'm sorry, dear," he said. "I'll be right home."

5

Late in the fall, Ezra Pike stopped by the office, not because he was sick, but because he had butchered one of his hogs and was bringing Benton a sack of sausages, Mrs. Pike being known throughout the valley as an expert sausage maker. Regularly, each fall at butchering time, Pike came by with a sack of sausages for old Doc.

It was one of the regional eccentricities that Benton had finally become accustomed to, although it had taken him a while. Over the course of any year, a lot of people

would come by with something for old Doc—a bag of black walnuts, a basket of tomatoes, a clutch of fancy baking potatoes, a comb of honey fresh from the hive —free-will offerings that Benton had learned to accept with considerable grace.

Although patients were waiting, Benton had Pike step into his office and settled down for a chat with him. Toward the end of their talk he asked the question he had wanted to ask.

"What do you know about the Barr family?"

"You mean the ones that bought Abner Young's place?"

"Those are the ones," said Benton.

"Not really much," Pike answered. "They come from Ohio, I think. Were farmers there. Don't know why they moved here. I know Barr pretty well and have talked with him, but he never told me and I never asked. Maybe because they got Abner's place dirt cheap. When Abner died, the farm went to some shirttail relatives out in California—nephews, I gather. They didn't want to be bothered with it. They never came for the funeral or to settle the estate. They told Abner's lawyer to sell it for what he could get as soon as he could, and he offered it cheap."

"So that was the way of it. I never really got to know Abner. He was in a couple of times. A crusty old customer. Once he had a foot infection. Stepped on a nail, the way I remember it. The other time he was on the verge of pneumonia. I tried to get him to let me send him to a hospital, but he wouldn't do it. Wound up that I gave him some drugs and he went home and managed to live through it. Didn't see him after that, didn't really hear much about him until I heard he died. Found dead by one of the neighbors, wasn't he? Probably he got sick and figured he wanted no more to do with me. Afraid I might send him to a hospital. Likely neither myself nor a hospital could have helped him much. He was one of those characters who fought a doctor tooth and nail."

Pike chuckled, remembering his neighbor. "I know people said he was a mean man, and in some ways I

suppose he was. Ran people off his place with a shotgun. The pheasants were knee-deep in his fields and he would allow no hunting. Wouldn't even shoot them himself. Never had much to do with his neighbors. Kept to himself. He'd gone sour on humanity. But he loved other things. He let his fence rows grow up to brush so that rabbits and woodchucks and birds would have a place to live. He always fed the birds in winter, and if English sparrows or blue jays came to feed he never tried to drive them off, or was put out about it the way a lot of people are. Said *they* got hungry, too."

"You sound as if you knew him fairly well, Ezra."

"Oh," said Pike, "we had our differences. He was a hard man to get along with. Unreasonable and had a bad temper. Had some funny ideas, too. He was an organic farmer. Never put a pound of commercial fertilizer on his land, refused to use pesticides. Said they were poison. Long before that lady wrote her book about a 'silent spring,' he said that they were poison."

Benton sat straight up. "You mean he never used any pesticides? No DDT at all?"

"That's what I mean," said Pike. "And the funny thing about it was that he grew as good a crop as any of the rest of us—that is, as long as he grew any crops. As he grew older, he farmed less and less. A good part of his land was idle. But what little he farmed, he farmed well. Abner was a first-class farmer."

Pike stayed a while longer and they talked of other things, but Benton scarcely heard him. His mind was buzzing with what Pike had said about Abner Young never using pesticides.

DDT! Benton thought. For the love of Christ, could it be DDT?

Here was the Barr family, farmers out of Ohio, where they probably had used DDT, then moving to a farm where not a grain of the chemical ever had been used. And among all the farmers in the valley, they were the only ones who had suffered from the exhaustion syndrome. Could it be that they had gotten used to DDT or

something else in the pesticides, and now were sick because of the lack of it?

The other farmers were okay, he figured, because there still were traces of DDT in their soil, and by working in the soil they were picking up enough of it not to yet experience any ill effects from the lack of it.

And the folks out in the hills? That was simple enough, he told himself. They had never been exposed to it, had never developed whatever need for it the others had acquired. They had never been exposed to it because they were so bone poor they could not afford to buy it. Raising their own food, consuming what they grew, never eating commercially canned foods or buying foods that might have been grown on DDT-drenched land, they had never been exposed.

The next day was Saturday, and in the afternoon, after office hours were over, Benton went through his files once again and found what he had expected to find: that, with only two exceptions, townspeople who had gardens and who actually worked in them had never mentioned any of the symptoms of the exhaustion syndrome.

He phoned Helen Anderson. When she came on the line, he said, "This is your friendly family physician and I'm going to ask you a silly question. Please don't laugh at me, for maybe it's important."

"Ask away. You know I wouldn't laugh at you."

"All right, then. When DDT was still available, before it was banned, did you use it in your garden?"

"Sure I did," she said. "I think most gardeners did. I used it for years and years, and I tell you I miss it. This new stuff, the bugs positively like it. They lap it up and settle down to wait for more. It doesn't even faze them. Herb used to fuss at me for using DDT. He said he didn't want his vegetables salted with chemicals."

"And Herb? Herb never works in the garden, does he?"

"Doc, you know damn well he doesn't. He makes fun of me and my gardening. You have heard him do it."

"But he eats stuff from the garden?" Benton asked.

"Are you kidding? Of course he does."

"Fine," he said. "Thank you for not laughing."

"Doc, what is going on? Has this got something to do with Herb—with the way he feels?"

"Maybe. I don't know yet. Maybe I'll never know. I'm just scrabbling around."

"All right," she said. "I won't ask. When you know, you'll tell me?"

"You can count on that."

He made several other phone calls to people who had gardens and to those who didn't. The two exceptions said they had never used DDT because they didn't want to mess around with it. It was too much work, they said. No, they said, their gardens didn't do as well without it and through the summer they had always bought some garden stuff from others and, like most people, had always used a fair amount of canned goods.

All of them wanted to know why the doctor asked, and some of them laughed at him; but that was all right, he thought, it didn't mean a thing. Everyone knew that old Doc had some strange ideas, like the time when he had raised so much hell about the water from the old municipal well that a new one had to be drilled, or the time of his strict insistence, as the town's health officer, that all garbage cans must be covered. Old Doc, everyone agreed, was a fuddy-duddy; but they loved the man and went along with his craziness.

He hung up the phone after his last call and stared at the pad on which he had made notes as he made the calls.

This could be it, he thought: enzymes and DDT. Was it possible that a coenzyme, by forming a bond with a molecule of DDT, had become a super-catalyst? And now that DDT was no longer available, the super-catalytic action was no longer possible. That, he told himself, could account for the symptoms of the exhaustion syndrome.

Take coenzyme A, the one so intimately tied up with two biochemical cycles—the fatty-acid cycle, for example, which operates to oxidize lipids. Deprived of the su-

per-catalyst on which the people had come to depend, fewer lipids would be oxidized and more would be stored as fat. Thus, an increasing incidence of obesity. With fewer lipids being broken down, the body would have to depend almost totally on carbohydrates for energy. Thus, the need for between-meal snacks.

Carbohydrates are transformed into useful body energy by means of the citric-acid cycle and the glycolysis process. The citric-acid cycle also involved coenzyme A, while the glycolysis process did not. If the two processes should become irregular, a seesawing effect, where one effect took over when the other faltered, and vice versa, could have far-reaching consequences. The blood sugar level would become erratic, a great deal produced at one time, very little at another. Lactic acid production would rise when the citric-acid cycle slowed down, since one of the functions of the cycle was to break down lactic acid. One result of a rise in lactic acid would be sore and aching muscles. And, in addition to the variation in blood sugar levels, the production of insulin also would be erratic. As a result of both conditions, there would be times when the brain would starve for lack of glucose in the blood. The symptoms would vary from fainting spells, convulsions, and shock to grogginess, irritability, and bleary vision.

It fit! he realized. It all fit, perhaps too perfectly.

He felt a moment of panic and distrust. He was going at it wrong, he knew. He was working with deduction. There should be extensive laboratory testing. But he was not qualified for laboratory work of the caliber required. He was going on a hunch alone, with no real evidence. His conclusions were unscientific and medically unacceptable. But the pattern was there, all logically laid out.

It was logical, he told himself, not only physiologically, but in other ways as well. It made sense evolutionally. Under the pressure of modern living, man was burning up more energy than he ever had before. Perhaps it was possible he had outrun the biochemical functioning of his body. Under such a circumstance, the body, as an evolutionary life system, would use anything

available to permit it to function more efficiently. If DDT were something that would help it to do a better job, if DDT made the enzymes or even one enzyme into a super-catalyst that would do a better job, the body unhesitantly would latch onto DDT.

But now that the DDT was gone, the human body had gone back to where it was before. Among those people to whom DDT had not been available, the hill people for example, the old non-DDT system was still functioning, perhaps not as efficiently as if DDT had been available, but at least not disturbed by having become a new system which had operated successfully for a time but now was lost. Those whose bodies had become accustomed to the DDT system now were suffering a reaction—the old non-DDT system was sluggish in recovering, if it ever could recover, its old efficiency.

Someone other than himself, he knew, should look into the situation. But to look into it would take staff and money. Perhaps it was time that he got in touch with Abbott, not waiting for Abbott to get back to him. Then he realized he did not know how to get in touch with Abbott. The writer had left no address or phone number, probably because he had expected to be traveling and for a time would have no permanent base of operation.

The best approach, Benton decided, was to phone Abbott's publisher. Someone at the publishing house undoubtedly would know how to go about reaching him. But it was Saturday and publishing houses, he suspected, would be closed. He would do it the first thing Monday morning, recognizing even as he thought, that his urgency was motivated by his wish to shift the problem of the exhaustion syndrome off his back. He had done the thinking and had gone as far as he could go; now it was time for someone other than himself to take over.

Maybe research would prove that his deductions were wrong. Right or wrong, however, some effort, he was convinced, should be made to find the truth.

He phoned first thing Monday morning.

He identified himself and said, "I was hoping some-

one on your staff could tell me how to get in touch with Robert Abbott. He came to see me several months ago and it's rather important that I speak with him."

The woman who had answered hesitated for a moment; when she spoke, she sounded slightly flustered. "Just a moment, sir," she said.

A man came on the line. "You were asking about Abbott."

"Yes. It's important that I reach him."

"Doctor," the man asked, "don't you ever see a paper?"

"I'm ordinarily too busy," said Benton. "I simply glance at headlines. At times not even that."

"Then you don't know that Abbott's dead."

"Dead!"

"Yes, a couple of weeks ago. A highway crash somewhere in Colorado."

Benton said nothing.

"It was a shock to all of us," said the man in New York. "You say you knew him."

"I didn't really know him. He visited me a few months ago. We talked an hour or so. I assume you know what he was working on."

"No, we don't. We've often wondered. We knew he was onto something, but he was closemouthed about it. You may know more than we do."

"Not a great deal," Benton said. "Thank you very much. I hope I did not disturb you."

"Not at all. Thanks for calling. I'm sorry I had such bad news for you."

Benton hung up and stared blankly at the office wall, not seeing the fly-specked diploma that had hung there so long. What do I do now? he asked himself. Just what in hell do I do now?

6

The first hard frost had come the night before and there was a sharp chill in the air the day Lem Jackson came into the office. Jackson was one of the hill people,

a tall, gangling man who appeared to be forty years or so of age. Benton knew who he was, but could not recall that he had ever been a patient.

Jackson sat down in a chair opposite the desk and dropped his shapeless, battered hat upon the carpeting.

"Maybe, Doc," he said, "I've done wrong in coming and taking up your time. But I feel all dragged out. I ain't worth a hoot. I am not myself. Seems like I'm tired all the time, and my muscles are sore. Most days I'm so ornery and feel so mean that I'm ashamed of myself, the way I treat the wife and kids."

"How about your appetite?" Benton asked. "You been eating well?"

"All the time. Can't seem to get filled up. I'm hungry all the time."

There it went, Benton thought—all the carefully worked out deductions, the elaborately constructed theory of the exhaustion syndrome. For Jackson was a hill man, and under Benton's theory the people of the hills had to be immune.

"What's the trouble, Doc?" Jackson asked. "Did I say something I shouldn't?"

Benton shook himself mentally. "Not at all. I was just wondering. What have you been doing, Lem?"

"To tell the truth," said Jackson, "not much of anything. A little farming, that's all. An odd job now and then. I feel so beat out I'm not up to a day of honest work. I guess I'd have to say I don't do much of nothing."

Then he went on, "Some while ago I had a good job down in West Virginia, but I lost the job. If I could've stayed on, I'd be sitting pretty now. Short hours, work not too hard, and the pay was good. But they up and fired me. The foreman had it in for me. I tell you, Doc, there simply ain't no justice. I was as good on the job as any of the other men."

"What kind of work?" Benton asked, not really caring what kind of job it was, but just making conversation.

"Well, I suppose, that even if I hadn't been fired the

job wouldn't have lasted. They closed down after I left. It was a small chemical plant. They were making DDT, and I hear they banned the stuff."

Benton felt himself go limp as relief flowed through him. His theory still stood up, he thought triumphantly. Lem Jackson was the exception to the rule his theory had set up that helped to cinch that theory. But even as he felt elated at this evidence that his deductions had been right, he told himself that his reaction was wrong. He should have been glad, it seemed to him, when he first had thought Jackson's symptoms shot his theory down—for, come to think of it, this business of DDT and the human body was a ghastly thing. But, in a perverse way, he had become fond of his theory. After all the work and thought he had put into it, no one, not even the most humane person in the world, would have wanted to be proved wrong.

"Lem," he said, "I'm sorry, but there's not a thing I can do for you. Not yet. There are others like you. Perhaps there are a lot of others like you. It's a condition that has just come to be noticed and there is work being done on it. In time, there may be a cure. I am sorry I have to be this honest with you, but I think you're the kind of man who would want that kind of honesty."

"You mean," Jackson said, "that I'm going to die?"

"No, I don't mean that. I mean I can't make you feel any better. You probably won't get any worse. There'll be a time, I'm sure, when there'll be drugs or medicine."

And all that would be needed, he told himself rather bitterly, was a pill or a capsule with a requisite dosage of DDT incorporated with carrier ingredients.

Jackson picked up his battered hat and got slowly to his feet. "Doc, all the people in the hills say you're a square shooter. 'He don't feed you no crap,' they told me. 'He is a doctor it's safe to go to.' You say probably I won't get any worse."

"Probably not," said Benton.

"And maybe someday there'll be a medicine that'll do some good."

"I am hopeful."

Watching Jackson leave, he wondered why he had told him what he had. Why the brutal honesty? Why the giving of some hope? "There is work being done on it," he had said; but that had been a lie. Or had it? There was one person working on it and that one person, he grimly told himself, had better buckle down to business.

That evening he drafted a careful letter, setting forth in precise detail what he suspected. Then, as he found the time, working in the evening after office hours were over, he typed the letters and mailed them out. Then he sat back and waited.

The first reply came, in two weeks' time, from *JAMA*. His letter, it said, could not be considered for publication since it lacked research evidence. *JAMA* was kind enough, but final. It did not even suggest he institute further research. But that was only fair, he admitted to himself, since there had been no research to start with.

The second reply, from the National Institutes of Health, was barely civil in its officialese.

The third, from the Association for Biochemical Research, was curt.

On a Saturday afternoon, when the last patient had left, he sat at his desk with the three letters spread out before him. It had been unrealistic, he admitted, to think that any one of the three would have paid attention to his letter. After all, who was he? An unknown family physician in a town that was equally unknown, advancing a theory unsupported by any kind of research, relying only on observation and deduction. The reactions to what he had written could have been expected. Yet there was no question in his mind that he should have written the letters. If no more than a gesture, it was something that had needed to be done.

So now what did he do? Work through the medical association, starting with the county, going to the state? He knew that it was useless. Smith, he was certain, might give him support; but the others would laugh him

off the floor. And even if this were not so, it would take years before there was any action.

A chemical company, perhaps. There would be millions of dollars' worth of business for a DDT capsule once what he now knew became general knowledge. But a chemical company, knowing the hassle of getting approval from the Food and Drug Administration, might shy away from it. Before a chemical company would even touch it, there would have to be years of laboratory work to provide supporting evidence to place before the FDA. On an idea so "far-out," he knew, no drug or chemical firm would put up the money that was necessary.

So he was licked. He had been licked before he even started. If Abbott had not died, there might have been an even chance. Abbott, writing about the syndrome, would have found a publisher, for he would have produced the kind of book publishers dream about—sensational, controversial, attention-grabbing. Published, the book would have created enough furor that someone would have worked on the theory, if for no other reason than to prove Abbott wrong.

But there was no use thinking about it. Abbott would not write the book. No one would write it. So this was the end of it, he thought. All the years he had left, he would carry the knowledge that he had found a truth the world would not accept.

The world! he thought. To hell with the world! The world was not his concern. His concern was for the people of this community, for Lem and Ted, for Burt and Herb, and for all the others. Maybe he couldn't help the world, but there might be a way, by God, he could help his people!

7

Lem Jackson lived on Coonskin Ridge, and Benton had to stop a couple of times to ask his way. But he finally found the farm, with its tilted acres and the little,

falling-down house crouched against the wind that whipped across the ridges.

When he knocked, Jackson let him in.

"Come and sit by the fire. It's a nippy day and a fire feels good. Mary, how about pouring Doc a cup of coffee. What brings you out here, Doc?"

"A small matter of business," Benton said. "I thought maybe you'd be willing to do a job for me."

"If I can," Jackson answered. "If I'm up to it. I told you, remember, I'm not good for much."

"You have a truck outside. This would be a hauling job."

"I can manage a hauling job."

Mrs. Jackson brought the cup of coffee. She was a small, wispy woman with hair straggling down across her face, wearing a bedraggled dress. From a far corner of the room, faces of children, quiet as mice, stared intently out.

"Thank you, Mrs. Jackson," said Benton. "This will go good after the long drive out."

"I have a bottle of brandy with some left in it," said Jackson, "if you would like a splash in that there coffee."

"That would be splendid, if there's enough for both of us. I never drink good liquor by myself."

"There's plenty," said Jackson. "I always keep a little in the house."

Mrs. Jackson said, "Lem told me you would let him know if medicine ever came along that would do him good. I hope that's why you're here."

"Well, I'm not absolutely sure," Benton said, "but that's what I have in mind."

Jackson came back with the brandy and a cup of coffee for himself. He poured generous splashes and set the bottle on the floor.

"Now about this hauling job . . ." he said.

"When you were in to see me, you said you worked at a plant down in West Virginia, making DDT."

"That's right," said Jackson. "They fired me off the job, but the plant was closed not long after."

"It's abandoned now?"

"I suppose so. It was just a little plant. It only made DDT. No reason to keep it open."

"Would you be willing to drive down there and try to get into the plant?" Benton asked.

"Shouldn't be no trouble. They might have fenced it in, but there shouldn't be no guards. There's nothing there to guard. Probably just sitting empty there. I could get through a fence. Doc, what are you getting at?"

"I need some DDT."

Jackson shook his head. "There mightn't be any left. They might've destroyed any they had left."

"DDT would be nice to have," said Benton, "but I'd settle for some dirt that had DDT mixed in it. Would there be that kind of dirt?"

"Sure there'd be! I know a dozen places where I could find that kind of dirt. Is it dirt you want? I could bring back a truckload. Even have a pal who would help —owes me a favor. Would a truckload be enough?"

"Plenty," Benton said. "I take it you will do it. There might be some danger."

"I don't think so," Jackson replied. "It's sort of isolated. No one nearby. If I picked the right time of day, there'd be no one to see me. But what do you want the dirt *for,* Doc? The damn stuff's poisonous."

"It also might be the drug I was telling you about. The drug that we don't have."

"You're spoofing me."

"No, I'm not."

"Well, I'll be damned!" said Jackson.

"You'll do it, then?"

"I'll start at sunup."

8

Late Monday afternoon, Nurse Amy stuck her head in the office door. "Lem Jackson's here to see you," she said. "He has a truck heaped full of dirt parked out in front."

"Fine. Please show him in."

Jackson was grinning when he came in. "I got the dirt," he said, "and better than that, I found three bags of DDT, tucked away in an old shed where someone had forgot them. Where do you want that dirt, Doc?"

"We'll put the bags of DDT down in the basement," said Benton. "Dump the dirt over in the northwest corner of my parking lot. And I wonder if you'd be willing to do something else for me?"

"Anything at all," said Jackson. "You just name it, Doc."

"Tomorrow I'd like you to come back and build a tight board fence around the dirt so no one can get at it. Then down in the basement I want a box built, a sort of sandbox, like the sandboxes kids play in."

Jackson scratched his head. "You sure do want the damnedest things. Maybe someday you'll tell me what it's all about."

"I'll tell you now," said Benton. "Old Doc's Dirt Box —that's the whole idea. After you get that box built, we'll fill it with some of the dirt you hauled and we'll seed it with a little extra DDT. Then I want you to sit down alongside that box and play in the dirt, just like a kid would play in sand. Make a dirt castle, build dirt roads, dig dirt wells—things like that, you know. You need DDT. Don't ask me to explain. Just do like I tell you."

Jackson grinned lopsidedly. "I'd feel like a goddamn fool," he said.

"Look," said Benton, "if I knew how much was safe, I'd put that DDT in capsules and you could swallow them. But I don't, and if I guessed wrong I could kill you off. But I do know that people like Helen Anderson, who works in a garden where there's still some DDT, are healthy as a hog—while Helen's husband, Herb, who won't dirty his hands in the garden, feels just the same way you do. All beat out, good for nothing, tired."

"Well," Jackson said reluctantly, "if I could do what you say by myself. If there was no one to see me . . ."

"I promise you no one will see you. I won't tell a soul."

Watching Jackson's retreating back, Benton stood for a time trying to figure out how he would convince Herb and Ted and Burt and all the others of them.

It might be a chore, he knew; but he would get it done. He would have them all down there in the basement, playing at that dirt box like a bunch of kids. After all, he was good old Doc and his people trusted him.

About the Editor

Judy-Lynn del Rey, editor of the *Stellar* series, was the managing editor of *Galaxy* and *IF* science-fiction magazines for eight and a half years. She has been a contributor to the *World Book Encyclopedia* on science fiction and is currently an editor at Ballantine Books, where among other things she is responsible for—what else?—the sf list. Mrs. del Rey lives in New York City with her husband, Lester, who has written memorable science fiction over the last thirty-five years.

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A TERRIFIC TURTLE

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